



# RADIO WORLD

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## Peter King, (Almost) Live From Haiti

A Correspondent Finds That Portable Gear And Emotional Support Are Equally Vital

BY PETER KING

*The author is a staff correspondent for CBS News Radio.*

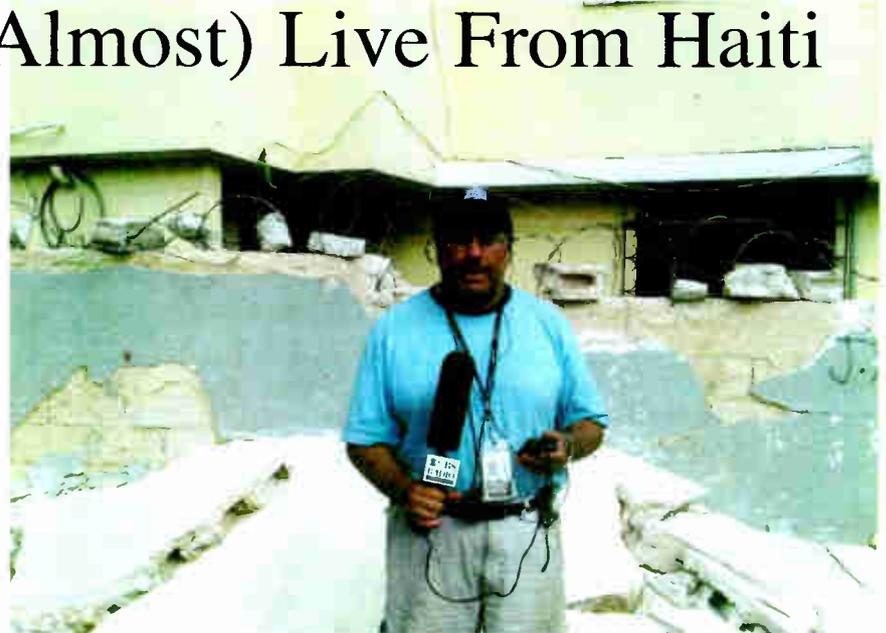
The first thing to know as a reporter going into a disaster like the Haitian earthquake is to expect nothing when you get there.

### FIRSTPERSON

Expect no water, food, land lines, cell lines, Internet, infrastructure, no place to stay, no help in getting information and, especially, no help in getting your story back home. That way you won't be disappointed; and when the above statement is contradicted, you'll be thrilled beyond belief.

I'd packed enough clothes and other supplies for a week — and had to leave them behind in Santo Domingo after being bumped from a charter plane to

*(continued on page 6)*



Peter King covers the story in Port-au-Prince near an orphanage that survived. Surrounding buildings did not.

## Song Tagging Push Is Underway

Some Radio Groups Tag, Others Prepare; And Some Wait to See the ROI

BY RANDY J. STINE

**NEW YORK** — It may not yet be the "killer app" that Jeff Smulyan, chief executive officer of Emmis Communications, has predicted it will become; but digital song tagging appears to be gaining a foothold in the United States among the larger radio groups. Whether consumers will follow is still unknown.

Nine major groups committed to

song tagging 17 months ago, but some of them are more active than others. Harder to determine is how well tagging is gaining traction among consumers, if at all, since download data often is hidden behind the corporate wall. Broadcasters contacted for this story were reluctant to discuss how many songs they are being credited with, citing confidentiality.

But most observers agree radio is *(continued on page 10)*

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# RDS: What You Need to Know

Our New Series of 'Best Practices' Will Help You Get the Most Out of RDS

BY ALAN JURISON

Recent developments have renewed interest in RDS support among broadcasters. I've worked with countless engineers, general managers and program directors when implementing RDS and

## RADIODATA

would like to share some of my knowledge to help you understand how the technology works and how to optimize it for your station(s). That's the goal of this new series of articles, which as we go along will be posted online in one place to create a new RDS resource at [www.radioworld.com](http://www.radioworld.com).

The European Broadcasting Union designed the Radio Data System in the 1980s to provide information, such as the station name and what's currently airing, to FM radio displays. This standard



'MyGig Navigation Radio' is an optional feature included on many of the higher-end Chrysler models. Shown is model RER, included in a 2008 Jeep Grand Cherokee Limited.

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was improved over the years and later adopted within the United States in 1992, with slight modifications, by the National Radio Systems Committee. This variation from the European version is called Radio Broadcast Data System, or RBDS. Because the concepts I am discussing often are interchangeable between the European and American standards, I will refer to these standards collectively as RDS.

Earlier in this decade, major U.S. automobile manufacturers started including RDS on many factory-installed radios. In the past few years, automakers have improved on these early designs with newer radios that include multi-colored, larger display touch screens for configuration, GPS navigation and even viewing of DVDs or other videos. Luckily, they've been able to improve the RDS experience as well.

Within the past six months, the Insignia NS-HD001, Microsoft Zune HD and Apple's iPod fifth-generation Nano, portable receivers with RDS sup-

port have entered the marketplace. The NRSC also has revived its RDBS subcommittee, as stations express a renewed interest in RDS.

With this series of articles, we'll try to provide suggested "best practices." Please give me your feedback as we go along at [alan.jurison@citcomm.com](mailto:alan.jurison@citcomm.com).

The RDS/RBDS standard documents are lengthy, technical documents that are not easy to read. Luckily for us, we don't need to know many of these details because RDS hardware/software vendors created products that handle most of the details already.

However, there are some basic things to know. The standard has two fields that are arguably the "most visible" as far as the listener is concerned. These are the PS (Program Service) and RT (Radio Text).

### PS (PROGRAM SERVICE)

The PS is an eight-character field designed in the initial RDS/RBDS standards to describe the radio station and

remain static.

Many early RDS receivers only showed this field prominently on the display, featuring no other information. Over time, the use of the PS has evolved into a dynamic "scrolling" or "framed" display. Against the intention of the original standards, most stations in the United States now frequently change the text of what is in the PS field. Instead of leaving the PS with a fixed value of the station name, stations started interleaving the station name and song artist and title, advertisements, promotional and other messages within the PS.

Because the field is limited eight characters, many of the messages stations want to display don't fit in such a small space, so RDS hardware and software vendors have developed solutions to take a long string of text — such as "93Q The #1 Hit Music Station Fireflies Owl City" — and chop it into the PS eight characters at a time, with time delays, creating

*(continued on page 5)*

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# Books, the Most Patient of Teachers

Here Are Recent Editions to My Radio/Broadcasting Book Shelf

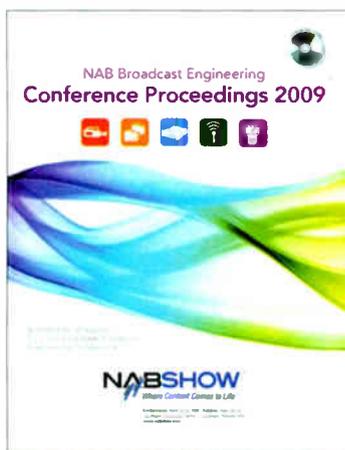
"Books are the quietest and most constant of friends," Charles W. Eliot wrote. "They are the most accessible and wisest of counselors, and the most patient of teachers."

Here are five recent books that will be of interest to radio readers.

**"NAB Broadcast Engineering Conference Proceedings 2010"** — This annual summary will go on sale at the NAB Show next month. It's a collection of technical papers from the 64th NAB Broadcast Engineering Conference (which we'll preview in detail next issue), and constitutes a snapshot of important radio and TV technical trends in the industry. If you can't attend, it's a superb substitute; if you do attend, it's a great summary. The book comes with a CD-ROM version. (Note that typically some papers aren't ready in time for publication and may not make it into the book.)

If you enjoy reading Radio World Engineering Extra, you'll love the BEC proceedings.

*Published by the NAB Office of Science & Technology, paperback/CD-ROM. As I write, the 2010 book isn't out, but last year's sold for \$120 retail and \$72 for NAB members; you can also buy just the CD, at a discount.*



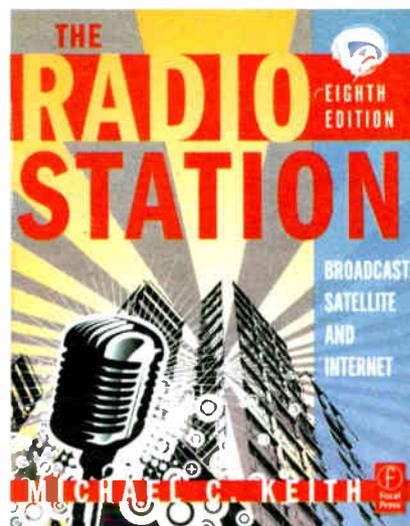
**"The Radio Station"** — It's the eighth edition of Michael C. Keith's popular text, which now incorporates broadcast, satellite and Internet radio too. Keith gives a very brief overview of the history and scope of the industry but focuses mostly on trends and functions of the various departments within a station: management, programming, sales, news, research, promotion, traffic and billing, production, engineering and consultants/syndicators. Fresh material talks about satellite, the web, digital radio, podcasting and blogs, PPM and cluster management.

This is a suitable introductory text for a student, or that person in your life who is interested in radio but doesn't know a lot about it; and it may fill in some gaps in your own knowledge if, for instance, you work at a station but don't know what the folks in another department actually do.

*Published by Focal Press, \$54.95, paperback.*

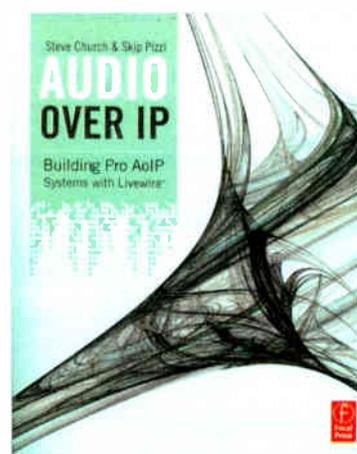
**"Audio Over IP: Building Pro AoIP Systems With Livewire"** — Steve Church and Skip Pizzi explain general principles of audio over IP and explore how those are implemented in the Livewire system developed by Axia Audio.

Church is president of Telos Systems



and co-inventor of Livewire; Pizzi is a consultant and former contributing editor of Radio World, which was not involved in the book. Church also is the 2010 recipient of NAB's Radio Engineering Achievement Award.

Because Church co-invented Livewire, it's not surprising the book focuses on that implementation. Though the material is not platform-agnostic, the authors think their focus on Livewire "does not reduce the utility of this book for users or potential users of other AoIP systems. On the contrary, having real examples



FROM THE  
**EDITOR**

Paul McLane



is vastly preferable to sticking purely to theory. We trust that many of the elements of Livewire we discuss will be easily recognized and made applicable to other systems." They make the analogy that you would not write about web design without considering the effects on one particular browser.

The book delves into the arguments for AoIP and network engineering topics such as TDM vs. IP, Ethernet/IP networks, LANs, WANs, the Internet and Quality of Service; it talks about switching and routing considerations. Major sections are devoted to designing and building with AoIP, VoIP phone systems in the studio and IP codecs. Good resources are presented including troubleshooting, FAQs and a useful glossary of acronyms.

*Published by Focal Press, \$59.95, paperback.*

**"Compression for Great Video and Audio"** — This is the second edition of a book by Ben Waggoner that aims to teach you how to compress video and audio with optimal quality and few hassles. The book is intended for "compressionists, people who want to be compressionists and people who on occasion need to pretend they're

*(continued on page 17)*

  
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MARCH 10, 2010

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**BEST PRACTICE***(continued from page 3)*

the scrolling effect.

Since many radios prominently display PS when a user tunes to the station, this practice ended up being the best way to get the majority of radios with RDS support to display a variety of messages.

This "evolution" of PS hasn't come without controversy; many have argued that it violates the written RDS/RBDS standards. Others are concerned that changing the display of a mobile receiver can be distracting to a driver. My goal in describing this is not to renew the controversy but to inform you as to the current state of the PS. Simply, most stations in the United States are employing some sort of scrolling or framing technique.

**RT (RADIO TEXT)**

RT is a 64-character field designed in the initial RDS/RBDS standards to be used as either a static or dynamic display.

For stations that don't have their automation systems updating their RDS encoders, this often is a basic static message with the station name and a short promotional message. Stations that have employed hardware and/or software solutions to get their automation systems to interface with the Radio Text may make this field dynamic, with a combination of the station name, song title/artist, advertisement/promotional messages, etc.

The problem is that receiver support for RT varies widely. Some receivers never supported this field. Those that did didn't prominently display the RT.

On many receivers that support RT, you have to press a button in order to access this field. Also, since older designs didn't always display all 64 characters simultaneously, the user often had to press the button several times to see the display, or the receiver itself would "scroll" the data across the display.

Luckily, newer automotive and portable players are starting to support the natural display of the RT, all the time, without additional intervention from the user. As receiver designs have improved and used higher-quality displays, they now have the ability to display most if not all of the RT all the time to the user.

**CONFUSION BETWEEN PS AND RT**

Because PS and RT are different fields in the RDS standards, they are treated differently by each receiver.

I can't tell you how many times I've talked to someone in the radio industry who gets these two fields confused. Often, this confusion involves the receiver the person is using.

Take the Denon TU-1500RD, a popular tuner used to monitor RDS data. The LED display doesn't support a full 64 characters, so the receiver scrolls the RT on the display to make it fit. Many

people confuse this with the PS scrolling or framing.

While the general listening public doesn't necessarily need to know what they're looking at (PS or RT), we in radio need to pay attention and understand how both fields relate to the user experience. I encourage you to try a variety of RDS-enabled radios to understand the user experiences listeners have.

It's important to know that there are newer radios that support RT equally as well as, if not better than, PS. While so much emphasis in the industry has been on the PS and its scrolling/framing effects, we need to be equally as aware of the RT. Ignoring the RT is ignoring the user experience for listeners on newer devices. This is the future of radio displays.

The photo shows one of the newer installed automotive receivers on the market, made by Chrysler. This device, the "MyGig Navigation Radio," is an optional feature included on many of the higher-end Chrysler models.

The company has several versions of this concept. Shown is model RER, included in a 2008 Jeep Grand Cherokee Limited. Notice the huge open space on the

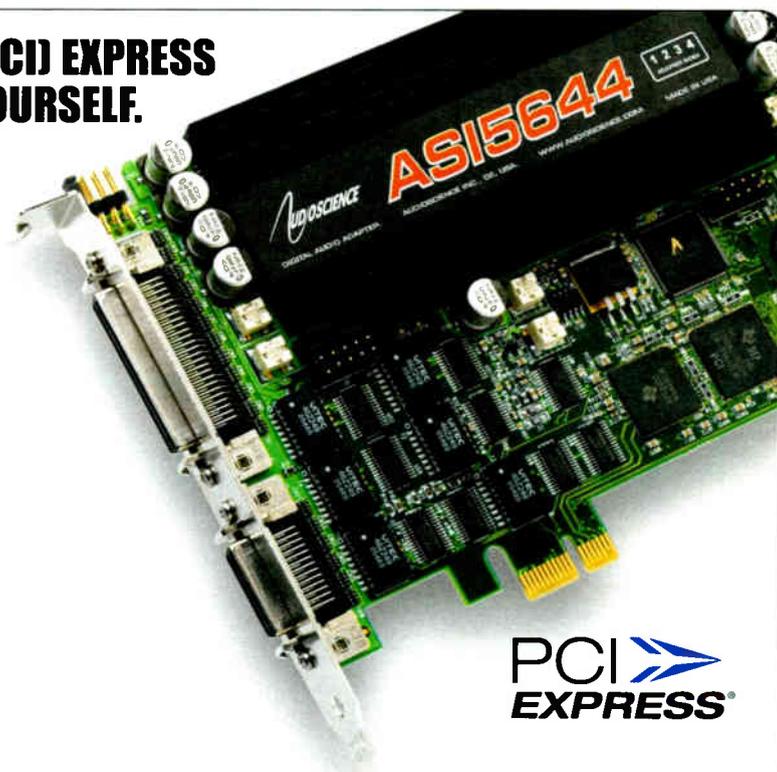
right side where the RT is displayed prominently. Once you've tuned to the station, your eye immediately is drawn to this area of the screen. In fact, with a display like this, you ignore the PS, which is displayed in a less prominent area under the frequency. The PS in this figure is "93Q," but this station uses a scrolling/framing PS display; over time the PS will show the song title and artist, too.

However, it is much more listener-friendly to show the entire RT immediately. I predict we are going to see more receivers that display the RT in a prominent way. The industry needs to make sure we're placing as much value on the RT as we have with the PS in the past.

I've come across stations that are doing PS scrolling/framing and aren't doing RT at all. If your station is in this situation, you should consider adding RT support for the reasons I've mentioned.

Next time, I'll discuss the RT Send Rate and Optimization.

*Alan Jurison is a regional IT manager/broadcast engineer for Citadel Broadcasting in Syracuse, N.Y. He holds several SBE certifications, including CSRE, AMD, DRB and CBNT.*

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**HAITI***(continued from page 1)*

a helicopter that was so small it felt as if I were strapping on a backpack with a rotor. I could take only what I could carry everywhere. My equipment and personal items included the gear shown in the box at right.

**JUMPING RIGHT IN**

Usually I go into assignments knowing that I'll be able to tell the story and get it back to CBS News in New York to be broadcast to the world, live or in a timely manner. This time, not so much.

My fears were not only the horrors that we'd started to see on TV but that I wouldn't be able to get enough good information while there, and that whatever news I did find I wouldn't be able to transmit back to New York.

It was no surprise when my BlackBerry and Verizon cell phone stopped working as we crossed the border; it was a relief to be able to contact New York on my sat phone.

I was stuck at the airport for a couple of hours after landing in Port-au-Prince, so after taking a few deep breaths, I began running around looking for people to interview. Not on tape — there was no way for me to feed tape back to New York — but on the sat phone,

with a "tape room" operator in the CBS Broadcast Center recording every word.

I found a line of Americans hoping to fly out of the country and went down the line for about 10 minutes. That established a pattern for the coming days: kind of a quick-and-dirty, bare-bones way of getting it done, but it worked.

My first hours in Port-au-Prince took me to the remains of a Citibank building, where the TV side had set up shop. Somehow a small army of correspondents, producers and technicians had gotten there, along with a sometimes-tenuous satellite uplink that became the network's lifeline to New York. There was one generator with enough power for the uplink, video editing equipment, lights and little else. That meant no laptop to edit on, and only the occasional charging of sat phones and camera batteries.

Right behind us was a group of people living on the streets, in an alley. Nearby was a tent city. In front of us was one of the main streets, filled with traffic and people aimlessly looking for help, food, water and shelter. It was a good starting point.

Knowing I would not be able to use my usual digital methods of newsgathering (laptop/flash recorder), I recorded ROSRs (radio on scene reports) into my MiniDisc recorder to feed to New York, in real time, on the TV uplink; but I periodically called

New York to record my descriptions, live to tape, on the phone, knowing it might be hours before any of my recorded material would be transmitted.

And that's pretty much how it worked through my entire stay. By this time, radio was getting plenty of taped material from my TV brothers and sisters, and my ROSRs gave their coverage a new dimension, spontaneous, unrehearsed and often emotional descriptions of what was around me, to compliment other correspondents' reports, actuality and nat sound.

Getting the sat phone to connect often was a challenge, since there were so many competing signals from other media and emergency workers. Getting TV sat time to transmit recorded material was tougher, as TV was feeding back a huge volume of material for the "Evening News," "Early Show" and "60 Minutes."

With "Evening News" managing editor and anchor Katie Couric on scene, they were recording all "E-N" segments after the first attempt at a live broadcast went belly-up.

Larry Doyle, a longtime CBS News producer, has always been kind to radio and made sure I got time to feed, as did other producers; but I often had to be ready on a moment's notice, which meant recording my voice tracks and editing them on the fly on my MiniDisc

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- Car inverter
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- 1 paperback book (Richard Russo's "Nobody's Fool")
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- 1 LL Bean windbreaker/rain slicker
- 1 reporter notebook
- 4 pens
- 1 CBS News Radio baseball hat
- The clothes on my back

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

It isn't every day you can broadcast your morning commute. And as far as we know, it's even more rare to broadcast from a bicycle. But that's just what Radio 3FM DJ Giel Beelen did on his 48-kilometer morning commute from Harlem to Hilversum in the Netherlands. How did he do it AND provide audio that's so good it sounds like he was right in the studio? He used ACCESS from Comrex.

Whether it's traveling to work or traveling to cover 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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World Radio History

recorder, organizing extra cuts and nat sounds, then feeding the finished product down the line when TV had a break.

This was how I'd used my MD recorder in my pre-flash recorder days; it served me well then, and it did again in Haiti.

#### **BLOG THERAPY**

As the days went on, the technology gap was slowly narrowed.

Several times, I used TV's BGAN Internet link (something I knew nothing about until Haiti) to upload my stories to New York — slow but effective (thank you, Dennis Vera). Two more satellite uplinks arrived, along with truckloads of food, water and other equipment. One of those uplinks was set up in our "compound" at La Maison, a hotel near the airport.

The hotel package included a satellite high-speed Internet link that allowed me to send recorded material in a more timely manner. It also meant that I could use my Marantz PMD620 and put together pieces on my laptop. And that I could blog for our Web site. My written blog was good therapy, as I was learning to deal with the day-to-day horrors of what I'd seen.

Three days after I arrived my BlackBerry began working for e-mail, which made communication with the

newsroom — and loved ones — much easier, and helped me feel less isolated. It also meant I could send back photographs to our Web site, as well as family, to let them see I was OK. Then T-Mobile cell phone service followed on my BlackBerry, which had been activated specially for the Haiti trip. Getting the story back to New York and on the air gradually became easier.

### **Getting the sat phone to connect often was a challenge, since there were so many competing signals from other media and emergency workers.**

I stuck to the pattern I'd established: Wake up at 5 a.m. to take care of morning drive newscasts and affiliate two-ways. Hitch a ride with one of our TV crews, a driver and interpreter, to go get stories (as TV started to pull out I had my own driver and interpreter/fixer). Call in to New York every time I saw something of interest, get tape, go back to our filing center, and send back nat sound, actuality, more ROSRs and wraps for the afternoon and for the next morning.

The days were long and tiring, but as

my former co-worker Bill Deane used to say, it was a "good" tired. And thank God that every time I connected with New York, our editors got me into the tape rooms quickly and asked me fantastic questions about what I was seeing.

About that list of equipment: The only things I'd brought with me that turned out to be useless were my Verizon air card and Verizon cell phone, which

were not equipped for use in Haiti. Everything else was used.

#### **EMOTIONAL SUPPORT**

The things I saw.

I could talk about it for hours. Bodies, mass graves, mass destruction, looks of despair from people looking for help and wondering why they weren't getting it — and especially the children.

One little boy came up to me and asked, in his tiny voice, "Aqua?" Water. Children and grownups alike scaveng-

ing for food, water, clothing, anything to help them make it through the day, or night. It will all stay with me forever. Emotionally, this is the toughest story I've ever covered.

I think the media, and in particular CBS, learned many lessons from Hurricane Katrina, the mother of American disasters.

The first was how important it is to support the "troops" out in the field. Not once did any of my managers ask "How long can you stay?" or "Can't you file more material?" Instead, it was "How are you holding up?" "What do you need?" and "We're working on getting you out of there."

An exit plan is good, and while I was nowhere near ready to leave when I first heard they were working on it, I was relieved when I knew I'd be leaving. (My friend Tom Benson tells me that when he got to Vietnam, the first thing the Army told him was when he'd be going home.) London reporter Vicki Barker arrived a few hours before my departure.

Management support hasn't stopped with my return home. They've encouraged me to take some time to breathe, to let them know if I need more time and to call our Employee Assistance Program for help if I needed a mental health counselor.

*(continued on page 8)*

## **LIVE & LOCAL**



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## FCC VOWS TO REFORM EX PARTE RULES

Among changes suggested by the FCC in how it accomplishes things are proposals to update its "ex parte" process. Ex parte rules are intended to make sure the public is aware of who may be influencing the decision process.

The FCC has proposed that anyone who gives an oral ex parte presentation would have to provide a written description of the discussion. Currently, such descriptions are required only when new material is involved. It also wants to require e-filing of these meeting summaries, so the public can see them faster.

In its notice, the commission asks for comment on whether to require that companies meeting with the commission should disclose ownership information in meeting summaries or filed pleadings so readers can better grasp the filer's interest. The agency is thinking of requiring summaries within four hours for an item that's to be on the agenda during its open monthly meeting during the seven-day "sunshine period" immediately before those meetings.

The idea is to make meeting summaries of ex parte discussion more clear. Democratic Commissioner

Michael Copps said in that the agency sometimes receives summaries that say a meeting took place on a given topic "without remotely approaching a sufficient level of detail on the arguments or data presented to allow the public or interested parties to respond."

Republican Commissioner Robert McDowell questioned whether the rules need revising, but said enforcement needs to be stepped up. He also said ownership information is readily available and wonders whether requiring ownership information for each ex parte filing is a burden to licensees.

And finally, the FCC has not proposed anything to address how the public comments through new media such as blogs. Some of those issues are subject to the ex parte rules and it's treating those case-by-case as it gains experience with new media. McDowell wonders if this leaves open a back door to presentations that would otherwise be prohibited. "What is the difference between a filing made during the Sunshine prohibition period through the commission's electronic filing system and the same filing posted to one of our blogs?"

I think anything to make the FCC's processes more transparent is a good thing and these rule changes may actually help filers stop submitting summaries that follow the letter of the rules yet contain no substance. That's a waste of everyone's time and doesn't help resolve conflicts.

— Leslie Stimson

## NEWSWATCH

**REVENUE:** U.S. radio revenue fell 18 percent in 2009, according to the RAB, though December sales were flat compared to a year ago. The 18 percent drop for the year includes declines of 20 percent for local radio, 19 percent for national and 9 percent for network. Off-air (non-spot) revenue also was off 9 percent; the only growth category for the year was "digital," meaning revenue from station Web sites; that was up 13 percent. RAB uses data from Miller, Kaplan, Arase & Co.

**EAS:** The FCC gave the public more time to file comments in the proceeding concerning national testing of the Emergency Alert System, in part to accommodate an EAS "summit" in Washington. The FCC moved the comment deadline on its Second Further Notice of Proposed Rulemaking, EB Docket No. 04-296, to March 15.

**CAB:** An impasse in a dispute between cable and broadcasters in Canada over retransmission fees broadcasters want for their material to air on cable is leading to the break-up of the Canadian Association of Broadcasters. Chairman Elmer Hildebrand told the CBC the group will shut down by June 1. Hildebrand, president and CEO of Golden West Broadcasting, hopes to form a radio-only trade group in the future.

## HAITI

(continued from page 7)

In fact, that's what I did when I came back from Katrina; and at some point, I'm expecting to call the therapist who helped me then. One of the biggest lessons: Never be afraid to ask for help. Doing so is a sign of strength, not weakness.

While I was in Haiti, many of our affiliate hosts asked me, "How are the reporters holding up?" My first reaction was to be incredulous. "Why should anyone care about us? We're not the ones who lost everything." And I said that on air a few times during affiliate two-ways.

But with hindsight, I'm grateful that people cared enough to ask, especially since we saw some horrific things that will stay with us for life.

In truth the CBS troops had it fairly easy. We had a place to stay, with beds or tents, security, power, water, toilets and yes, even a bar. We had a steady pipeline of food, water and other supplies trucked in thanks to Ana Real, a CBS News producer sent to Santo Domingo from New York. She was our supply master, travel agent and, especially, the comforting shoulder we needed when we left Haiti to overnight in the Dominican Republic on the way home.

### THANKSGIVING

When I got home, Lisa, the love of my life, was waiting for me at Orlando International Airport.

She's been there and done that, having covered Bosnia, Katrina and Iraq during her long reporting career. Though I'd been in Haiti only for eight days, she knew that the impact would last a lifetime.

She flew in from her home near Boston, saying, "How could I not be there?" A week later, I flew to Boston for a long weekend and she cooked a "thanksgiving" dinner, thankful that I was home safely. I don't think any November Thanksgiving has been more meaningful.

During my last days in Port-au-Prince, I got an e-mail from management asking for advice for the morning host of a CBS Radio station in Tampa who wanted to do his show from Haiti. He asked about logistics, what kind of help he could expect, that kind of thing. My reply: "Tell him to bring everything he'll need. It's like going to Gilligan's Island without the Professor to make a telephone out of a coconut."

That may sound flippant given the horrific nature of this story; but I'm guessing it rings true for every reporter who was in Haiti during those first days.

But guess what? I want to go back. There's so much more to tell.

Peter King is based in Orlando. Contact pkingnews@aol.com

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## TAGGING

(continued from page 1)

not yet to the point where consumers are widely tagging and downloading songs.

### SKEWING YOUNG

Many broadcast leaders believe song tagging — the technology that allows listeners to “tag” songs they hear over the air, then download and purchase them later — is important for radio’s future, especially as portable audio device ownership among young people skyrockets.

Radio’s efforts to attract younger demographics are viewed as crucial to future success. A recent study by the Kaiser Family Foundation found that approximately 76 percent of 8-to-18-year-olds own an iPod/MP3 player, up from 18 percent in 2004. Meanwhile, in a study commissioned by Microsoft in 2008, 61 percent of respondents said their primary source for discovering new music is radio. So it is easy to understand why song tagging is viewed as important.

Apple and Microsoft believe song tagging will boost download sales through their online shops. Meanwhile, broadcasters using the platform hope to expand the listening experience for their audiences and earn a small commission for each song sold, according to proponents.

Specially equipped analog tuners and HD Radio receivers featuring iPod docks — using the Radio Broadcast Data System and HD Radio, respectively — can tag songs with song identifier metadata, called a Unique File Identifier (UFID) code. (RBDS is a communications protocol standard for embedding small amounts of digital information — for example song title and artist info — in the subcarrier of analog terrestrial FM radio broadcasts. HD Radio carries tagging info as part of its digital data stream.)

Apple and Microsoft use different UFIDs, which are non-compatible. Radio stations can choose to send either Apple or Microsoft UFIDs, or both. Jump2Go, a datacasting technology company that licenses song tagging software to stations, broadcasts unified tagging IDs for iTunes and Microsoft’s Zune MP3 player, according to Jump2Go.

Although the receiver stores no audio, an iPod or MP3 player docked to the specially equipped radio can store the song metadata. When the player later is synced with a PC, the computer’s software can show songs that were tagged and are available for download from the iTunes or Microsoft library.

Owners of Apple’s iPod Nano can use its built-in analog FM tuner to tag song info and then download the title once the device is synced to a computer. The Microsoft Zune HD MP3 player offers similar capabilities, and consumers can download tagged songs from the Zune Marketplace immediately in Wi-Fi hotspots.

Radio receiver manufacturers are taking notice of song tagging trends. Multiple tabletop home radio and aftermarket receivers feature HD Radio and RBDS song tagging capability. Ford has said it will offer factory-installed HD Radio receivers with iTunes tagging capabilities this year. In its 2010 buyer’s guide, iBiquity Digital lists six tabletop radios that act as docking systems with iTunes tagging.

### THE PLEDGE

Clear Channel, Citadel, Beasley, Greater Media, Bonneville, CBS, Emmis, Cox and Entercom signed onto the pledge to roll out song tagging in September 2008. When they made the announcement, they said 450 stations were airing song tags or would be soon.

Emmis’ Smulyan wasn’t the only radio CEO excited about radio song tagging capabilities. Bob Neil, president and

that aggressively moved to song tagging.

“We do (song tagging) on every Greater Media FM music station and were among the first to use the Jump2Go platform,” said Milford Smith, vice president of radio engineering for Greater Media. The company owns 23 AM and FM radio stations, of which 15 have music formats. But as for consumer reaction, he says his market engineers have heard no feedback about tagging.

Chuck Tweedle, senior vice president at Bonneville, said, “We are currently tagging on all of our music FM analog channels using available bandwidth in the RBDS technology. In addition, we are launching tagging on all of our HD1 music channels during the first quarter this year, including Chicago, Cincinnati, St. Louis, Phoenix and Los Angeles.”

Bonneville has 13 analog FM music

there are roadblocks,” said Gary Kline, vice president of engineering and IT for Cumulus, especially when a company owns hundreds of stations.

“It would be very expensive for us internally with how we value it,” Kline said. “We’d like to see the fee sharing arrangement tipped a little more in our favor.” Industry analysts peg the commission Apple is paying broadcast partners at close to 5 percent of the price for each download credit.

Several smaller broadcast groups contacted for this story said they are excited about the possibilities associated with song tagging.

Marty Hadfield, corporate engineer for Alpha Broadcasting, said the radio group is about to begin a six-station studio consolidation in Portland, Ore., after which the broadcaster will have RBDS song tagging for that cluster. Alpha is owned by Larry Wilson, co-founder of Citadel Communications. Wilson last year purchased two stations in Portland from Microsoft co-founder Paul Allen and four from CBS. He sold his interest in Citadel Communications in 2001 for \$2 billion in cash.

“What a great way to interact with listeners,” Hadfield said of tagging. “The listening public has always sought more information related to what they hear on the air.”

Meanwhile, Lincoln Financial Media, licensee of nine FM stations, is considering tagging, said Barry Thomas, vice president of engineering.

“Some of our formats do not lend themselves to tagging. Specifically, I doubt it would be a huge thing with listeners of our country formatted stations,” he said.

Nonetheless, Thomas, who also is chair of the National Radio Systems Committee subcommittee on RBDS, said he is excited about song tagging and other possibilities with RBDS and RadioText Plus, an enhancement to RBDS text services.

“I love the idea. It connects listeners back with the radio stations and gives broadcasters a way to interact with and establish a relationship with listeners,” Thomas said.

*Read about basics of RDS on page 3.*

## Radio is not yet to the point where consumers are widely tagging and downloading songs.

CEO of Cox Radio, stated at the time. “The connection between the music discovery radio has always provided and its resulting sales make this interactive radio feature a natural for the radio industry.”

Greater Media President and CEO Peter Smyth added, “This innovative technology is yet another compelling example of how radio is embracing today’s interactive world.”

Of those nine groups, some have now started tagging while others apparently are still preparing to do so. Several, including Citadel and Beasley, declined to comment on their plans because of privacy concerns when contacted for this story by Radio World.

### ‘KILLER APP’

Emmis continues to believe in song tagging and is in the process of implementing it in its major markets, according to Paul Brenner, senior vice president and chief technology officer, though he sounds a pragmatic note when discussing it.

“Any technology that directly links our mass-market medium to a more targeted two-way technology is a benefit to listeners, our brands and our industry,” he said. “Based on revenue shares and our experience with our online iTunes tagging business,” he said, the company doesn’t expect a windfall from tagging, but does expect some profit. “Emmis Interactive has been focused on how to marry our existing iTunes technology with our on-air operations.”

Greater Media is one of the groups

stations and two HD Radio simulcast channels tagging; it expects another 11 FM HD channels to add the capability by the end of March. It is working to give its properties “additional stickiness” with listeners, Tweedle said.

“That allows the company’s cross-platform standardized tagging infrastructure on analog and HD1 an opportunity for enhanced revenue streams in different areas as the technology emerges.”

### LARGE AND SMALL GROUPS

Clear Channel has embraced the technology, with more than 400 of its radio stations using RBDS and another 350 HD Radio channels for song tagging.

“This has created a big buzz not only across the broadcast community, but also the mobile electronics space. All of our Web sites have tagging capability. We really have a deep integration,” said Jeff Littlejohn, executive vice president for distribution development for Clear Channel. Asked about consumer reaction, though, Littlejohn said he had none to pass on.

One major broadcast group, Cumulus Media, is watching developments but has yet to launch song tagging on any of its radio stations and has no immediate plans to do so. Cumulus is the second largest radio broadcast group in the United States with approximately 350 stations in 68 markets.

“We are looking at options. We look at everything that might enhance our product. Tagging is one of those things, but



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# Digital Portables, Car Receivers Proliferate

## HD Radio-Based Traffic to Be More of a Factor This Year

BY LESLIE STIMSON

**LAS VEGAS** — HD Radio will be available in more cars and receiver form factors this year, including more portables — with at least one HD Radio portable that includes AM for the first time.

More radios will offer iTunes tagging, and real-time traffic using the data portion of the HD Radio signal will be featured on more navigation devices.

These trends were evident at this year's Consumer Electronics Show.

Technology developer iBiquity Digital Corp. hopes that as the economy improves, more broadcasters and, in turn, more of the public will notice the expansion and participate.

In the automotive category, Ford showcased what it and iBiquity call the first factory-installed implementation of an HD Radio-enabled iTunes tagging receiver. Automotive aftermarket receiver manufacturers JVC, Kenwood and Sony are coming out with integrated auto aftermarket HD radios, including the first aftermarket integrated in-dash radio with Real Time Traffic, the JVC KD-NT3HDT; this also was used at CES to display image support, delivering images synchronized to audio programming on HD Radio broadcasts using Clear Channel Real-Time Traffic with Journaline Information Services.

Cycle showed a portable naviga-

tion device with a built-in HD Radio Electronic Program Guide.

Here's an overview of news related to HD Radio from CES.

### HD RADIO PORTABLES SOON TO INCLUDE AM

The first HD Radio portables to include either analog or digital AM reception are coming this year.

Sangean displayed two such prototypes in the iBiquity booth.

The Sangean DT-600 HD personal receiver supports analog AM along with FM analog and HD Radio reception. The pocket-size unit features a built-in speaker, a lithium-ion rechargeable battery, 20 presets (10 each for FM and AM) and a sleep timer. The radio is multicast-capable and supports program-associated data services. HD Radio options include emergency alert and iTunes tagging via a



The Sangean DT600HD, to ship in June, is a portable that includes not only digital and analog FM HD Radio but also analog AM. A planned subsequent version will add digital AM too.

USB port.

Up until now, manufacturers have resisted including analog or digital AM in HD Radio portables, citing the difficulty and expense of getting good reception with a small antenna. The 600 uses an earbud cable as an antenna. The 800 uses that, plus a telescoping monopole.

Also on display was what would be the first portable to support both AM and FM-band HD Radio reception, the Sangean DT-800 HD. The pocket-size radio includes the functions of the DT-600 HD.

Sangean projects June availability for the DT-600 HD, and October for the DT-800 HD; it has not yet announced prices.

### NAV DEVICES FEATURE HD RADIO TRAFFIC

Cycle, JVC and Nextar introduced navigation devices featuring HD Radio traffic data.

In addition to the United States, Cycle says its T43H, a portable GPS navigation device with built-in HD Radio, can be used in Canada and South America. The real-time HD Radio traffic updates feature Clear Channel's Total Traffic Network.

The unit also functions as a multimedia player for listening to music



JVC expanded its in-dash CD receiver line with four HD Radio models including a navigation unit, the KW-NT3HDT.

as well as to view movies and pictures. Cycle also is working to add features such as Bluetooth, mobile TV and Wi-Fi, a spokeswoman told Radio World.

The South Korean company projects the T43H will be available at the end of the first quarter.

JVC expanded its in-dash CD receiver line with four HD Radio models, including a navigation unit, the KW-NT3HDT. The navigation receiver includes an HD Radio tuner and features iTunes tagging and Clear Channel's Total Traffic HD Network, a free lifetime subscription with the purchase of the unit. Local weather conditions, sports scores and news headlines are also featured with Total Traffic.

The KW-NT3HDT navigation receiver is satellite- and iPod-ready and has a front USB port for iPod/iPhone control. The unit is MP3/WMA-compatible and features a front auxiliary input. The receiver is available in March with a list price of \$1,199.95.

Nextar debuted a portable navigation device with traffic and other updates — such as weather and speed-camera warnings and gas prices — using HD Radio. The unit is slated to ship in the second half of the year.

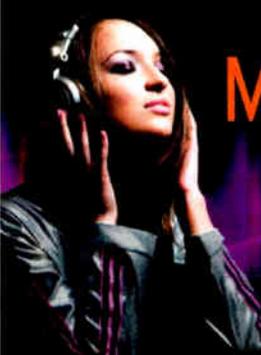
### STRUBLE: IT'S A DIFFERENT WORLD NOW

Ford will offer HD Radio technology with iTunes tagging capability as part of its updated Sync communications platform this year. The automaker will offer Pandora Internet radio as well.

Pioneer and Alpine are including HD Radio and Pandora options on their navigation platforms as well this year. The Pandora reports were big news at CES (see Feb. 10 issue).

What does increasing connectivity in the car mean for HD Radio? iBiquity President/CEO Bob Struble says Pandora is just one more new entertainment choice up against traditional AM and FM in the automobile. Social media, as well as live, mobile television services like Flo from Qualcomm, and soon to come digital mobile TV, to name a few, are also radio's competition in the car.

(continued on page 14)



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## CES HD

(continued from page 12)

"AM and FM is going to have to innovate and work very hard to keep a position" in the car, he said in an interview; but Pandora and other Internet radio "in a mobile environment is not going to be Armageddon nor 'Death Stars' for AM and FM." He said Internet radio in the car "won't work from a capacity or economic standpoint." He characterized mobile Internet radio as a niche service, much like satellite radio.

However, new services competing for

consumer attention all are digital, he said. "Radio has to adopt digital technology to be able to compete effectively in the race for the car."

When told of a radio programmer's statement at the show that the HD Radio rollout is in trouble, Struble disagreed, noting that more than 730,000 HD Radio receivers were sold in 2009, twice as many as in 2008.

He said HD Radio is not dying in the car, citing announcements by Ford to add iTunes Tagging capability to its HD Radio offerings. Volkswagen announced that some 2010 models equipped with

DVD navigation systems will include HD Radio. The automaker also plans to bring HD Radio to its touch-screen radio systems on future models. Audi will make HD Radio standard in several 2011 models available later this year.

The announcements bring to 15 the number of automotive brands offering the technology in cars in 2010.

However station conversions as well as promotion of the technology at the station level were limited in 2008 and 2009, he acknowledged, without giving figures. "Radio has been troubled by the economic downturn. That, to an extent, is going to limit the resources [and] creativity they can apply to the technology."

As to what innovations broadcasters will see from iBiquity in 2010, he cited the first HD Radio portable to include AM (see story above). "That's something AM broadcasters have been asking for."

iBiquity and partners keep working to "feature up" the system. He pointed out the Cyde and JVC introductions, the first aftermarket in-dash navigation products containing HD Radio and real-time traffic.

He predicts consumers will see album art, images synchronized to audio programming, featured in HD Radio products this year; iBiquity is developing a software development kit for receiver manufacturers to help enable integration of this feature, planned for late 2010. It displayed such a platform from SiPort in its booth. "It's something consumers clearly want," and stations and automakers like it as well, he said.

The company also displayed a development platform from STMicroelectronics featuring HD Radio-based traffic supplied by Navteq.

Asked what iBiquity can do to get stations, especially smaller outlets, re-focused on HD Radio once they begin to see revenue return, Struble said: "Ultimately, what we've heard frequently is to get anybody excited you have to have monetization potential. And you can't have that unless there's an installed base. So that goes back to, if we sell radios in cars, portables and in consumer electronics devices, then things get a lot better."

There are some HD Radio applications that can help stations make money, he said, and some HD2 channels are being monetized, citing bandwidth leases as an example; iTunes tagging results in revenue for stations as well. Indeed, Sony and Kenwood are offering tuners with built-in HD Radio technology featuring iTunes tagging for the first time.

If stations are able to look over the horizon again in 2010 they're going to see HD Radios in more cars, with more available features and portables, Struble said. "In the last 18 months it's kind of a changed world."

## SHERWOOD DEBUTS A/V RECEIVER WITH HD RADIO

Sherwood America's first audio/video receiver with HD Radio capability, the RD-7405HDR, adds digital AM and FM to its RD-7405 model, otherwise sharing the same features and specifications including AM/FM stereo tuner. Its HD Radio tuner can display real-time song and artist information on its front panel, and it can also receive multicast programming on HD2 or HD3 channels.



Sherwood America's first audio/video receiver with HD Radio capability is the RD-7405HDR.

With a list price of just under \$220, the 7.1 channel receiver RD-7405HDR is expected to ship in March.

Other features include 30 tuner presets, discrete amplifier stages and 192 kHz/24 bit D-to-A converters for all channels, both Dolby Digital and Dolby Pro Logic II processing and five DSP surround modes. The unit also has multisource two-zone capability, two HDMI inputs and one HDMI output. Audio connections include two coaxial and one optical digital, five analog inputs and two analog outputs.

## KENWOOD, JVC INTEGRATE HD RADIO

Kenwood USA's integrated HD Radio offering for 2010 is the KDC-HD545U, with HD Radio and iTunes tagging.

A front-panel USB input and mini-plug auxiliary input enables playback of external media. Mixed-preset memory gives the user one-touch access to selected AM, FM, HD Radio. With an additional tuner, the unit can receive satellite radio stations. The KDC-HD545U is available through authorized Kenwood retailers at \$240 list.

JVC has added HD Radio to more in-dash CD receiver models. The KD-HDR40 CD receiver features an HD Radio tuner, front auxiliary input

(continued on page 21)

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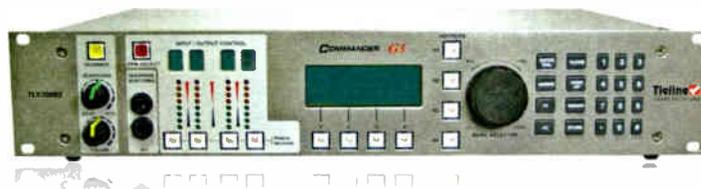
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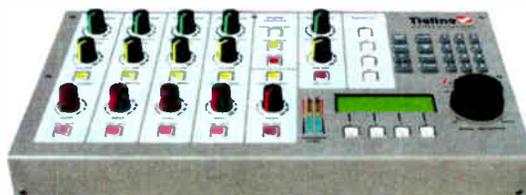
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# A Man With His Hands in AM

The Late Dave Gorman Was a Leader in AM System Projects

BY TOM VERNON

In a career that spanned almost 50 years, Dave Gorman, founder and vice president of Phasetek Inc. of Quakertown, Pa., served many stations by providing AM phasing and branching gear, antenna tuning units, multi-

plexers and consulting services.

Gorman passed away in 2009 at the age of 78 following a brief illness. Colleagues remembered him as one of the most sought-after consultants on AM phasors and directional arrays.

He started his career in electronics while serving in the Navy shortly after

World War II. Following his discharge he worked for Philco in Philadelphia, designing consumer electronics products. While working there, Gorman attended Temple University at night, eventually earning a degree in electrical engineering.

In the early 1960s he went to work for American Electronics Laboratories, at the time a subcontractor for RCA, designing AM antenna phasing equipment. It was at AEL that he learned the art and science of designing AM antenna arrays, something not taught in university engineering classes.



Dave Gorman at work. 'Many consultants are very secretive and protective of their knowledge, but Dave wasn't like that,' one colleague said.

In the late 1960s, Gorman left AEL and started his own company, PER Corp., designing antenna phasing equipment and providing installation and field service. The firm went through several business iterations as PER evolved into CSP Inc., then Vector Technologies. The latter went out of business in 1990; Gorman and his son Kurt then founded Phasetek Inc.

## HONEST DEALING

Over a half-century, Gorman worked on hundreds of jobs. Some of the most notable include construction of a new directional array for XTRA 690 in Tijuana, Mexico; design of antenna and phasing equipment for a new WTMJ transmitter site in Milwaukee; and the design and construction of a 100 kW diplexer for stations in Caracas, Venezuela.

"My dad loved to travel and enjoyed working with people," said Kurt Gorman. "He was always happy to be on a site helping out the local engineers, even if he wasn't selling equipment to them. When installing one of our systems, he saw to every detail of the installation personally, and wouldn't quit till it was right."

Tom McGinley, director of engineering and manager of information systems for CBS Radio in Seattle and technical adviser to Radio World, recalls

Gorman's honesty and integrity.

"In 1982, we contracted with CSP for a new phasor and LTU system, and paid half the cost as a deposit," he said.

"Dave called me about a month ahead of the delivery date and said he had encountered financial difficulties, was temporarily suspending business operations and could not supply our system by the deadline. He returned our down payment and suggested we buy the system from another vendor, which we did.

"A number of years later we rewarded his honesty and good faith by buying another system from Dave, who had reorganized as Vector Technologies."

## END TO END

A willingness to dig in and get his hands dirty and to take on projects no one else would touch are traits recalled by Glynn Walden, director of engineering for CBS Radio Philadelphia.

If anyone deserves recognition for countless contributions to AM radio technologies, Dave Gorman is very high on the list.

— Harry Simons

"Dave was both a friend and an engineer," said Walden. "He was not only an equipment manufacturer and installer, but also a consultant. When we hired Gorman he just did everything end to end, with no need to call in an outside consultant."

Walden recalls a story about a station in Alabama that had an AM antenna array in poor condition.

"The easiest thing would have been to gut the whole system and start from scratch. Gorman knew, however, that the owner didn't have that kind of money. So he took on the Herculean task of rebuilding the existing array, using as few new parts as possible."

Gorman also is remembered as an educator, if not in the traditional sense of the word.

Harry Simons, retired vice president of engineering for First Broadcasting of Dallas, reflects, "Many consultants are very secretive and protective of their knowledge, but Dave wasn't like that. From my first contact with him working on the DA at WAEB in Allentown,

(continued on page 17)

What is the only thing smaller than the 14 Mayah C11 Audio Codecs?



**The answer is simple: The price.** However, it can perform like a giant. Although four times smaller than the competition, each of the 14 different C11 audio codecs offers many more features.

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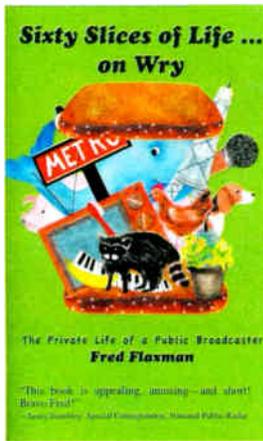
**BOOKS**

(continued from page 4)

compressionists.”

He explores concepts of vision and hearing, applies them to compression and then talks about creating, editing and compressing video and audio for use on the web, DVD, Blu-ray, phones and other platforms.

I love that he opens with a “quick start guide to common problems,” answering questions like “My boss says I need to put some video on our Web site. Where do I start?” and “Do I need a streaming server to put video on the Web?”



He calls the book a tongue-in-cheek memoir. It is a brief set of breezy stories about people Flaxman has met, places he’s lived, his dog, his friends and his surprise role in the infamous “hanging chad” case in Florida.

Order at [www.sixtyslices.com](http://www.sixtyslices.com), \$16, paperback.

**GORMAN**

(continued from page 16)

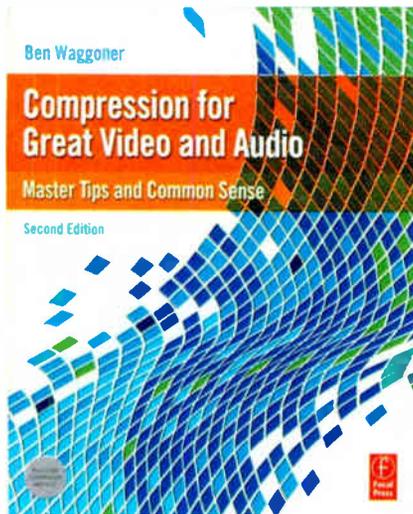
Pa., Dave impressed me as someone who was willing to share all that he knew about the special art form of phasors and antenna arrays. He was able to connect with you at your level of understanding and build from there. For those who wanted to know more, he was always willing to teach.

“If anyone deserves recognition for countless contributions to AM

radio technologies.” Simons continued, “Dave Gorman is very high on the list. Dave dedicated a lifetime developing and manufacturing innovations into AM antenna systems used worldwide. Why Dave would choose a thankless career as a broadcast engineer, only a broadcast engineer would understand.”

Phasetek Inc. continues to design and build AM DAs and antenna gear under the leadership of Kurt Gorman.

Comment on this or any article. Write to [radioworld@nbmedia.com](mailto:radioworld@nbmedia.com).



Formats discussed include Windows Media, Quick Time, Flash FLV and F4V, MPEG-4, MPEG-2, Ogg Vorbis and Theora, Silverlight and Smooth Streaming. New material in this edition includes VC-1, H.264 and mobile video.

Waggoner cofounded Journeyman Digital and is a principal video strategist for Microsoft’s Silverlight platform.

Published by Focal Press, \$49.95, paperback.

“Sixty Slices of Life ... on Wry” — Fred Flaxman offers a lighthearted look at “the private life of a public broadcaster.” Though he has spent a great deal of time in public television, he also is a radio guy; he was founding manager of WETA(FM) in Washington, has been heard on “Marketplace” and “Monitor Radio” and produces and presents the public radio series “Compact Discoveries.”

Actually there isn’t much radio in the book, though I enjoyed his anecdotes about receiving a jock strap in the radio station’s mail, why host Renee Chaney once needed a police escort and how WETA(FM), with no political commentary in mind, managed to play “Joy to the World” on the air on the August morning just after Richard Nixon had resigned.

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# Add a Relay, Save a Transistor

## Here's a Tip for Owners of Harris MW-1 Transmitters

Usually after a transmitter is discontinued, any hope of upgrades or improvements fades. Some enterprising engineers can't help but fix a problem.

Ted Fuller of Fuller Electronics of Salisbury, N.C., offers a tip for owners of the old Harris MW-1 transmitter.

### WORKBENCH

by John Bisset

Read more Workbench articles online at [radioworld.com](http://radioworld.com)

In addition to providing full-service repair and recalibration of broadcast equipment, Ted does his fair share of contract work.

At one of his contract sites he was losing a lot of MW-1 output transistors. Ted writes that by accident he discovered that the Q2 transistors in the A1 through A12 RF/AF output modules were being damaged at the moment that the transmitter was turned off.

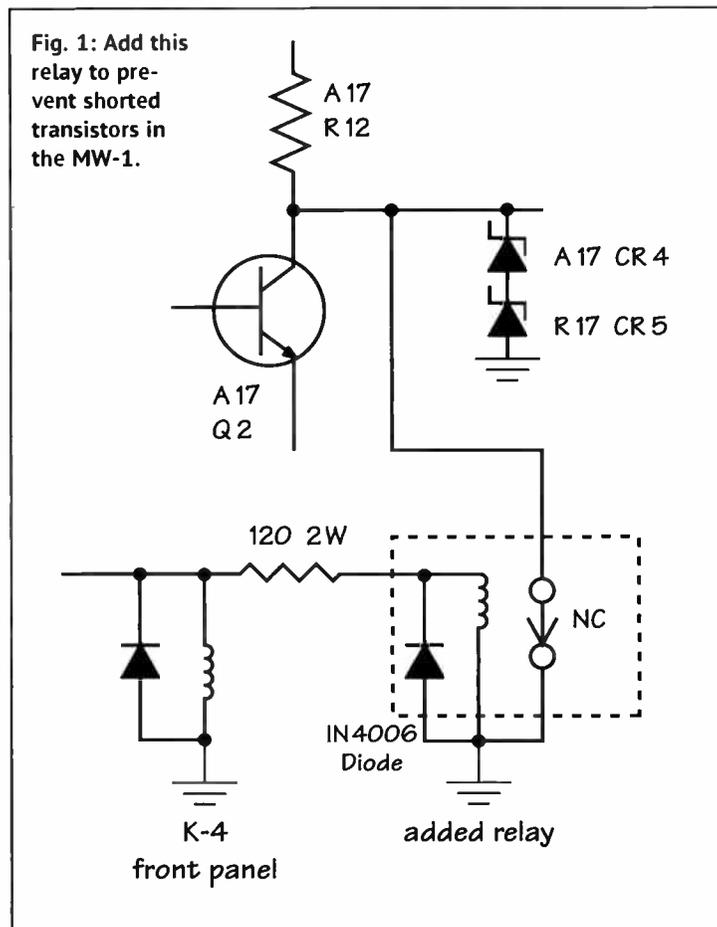
Ted also noticed that the PA voltage meter would shoot up briefly for a second after transmitter turn-off. On this particular transmitter, the +140 volt supply discharge resistor, R11, was a 10 ohm, 200 watt resistor. Ted noted that some of the MW-1 schematics recommended changing R11 to 100 ohms at 200 watts.

When he tried this, it caused the meter PA voltage meter to shoot up higher, and for longer. Ted decided to change it back to 10 ohms until he found the problem. After probing around the transmitter with an oscilloscope, Ted made an interesting discovery. The source of the problem is the A17 Audio Driver Board.

When the transmitter turns off, on/off relay K3 immediately turns off power to the A17 Q1 collector. This turns off A17 Q2, which causes A17 Q3 to go into full conductance, discharging whatever is left in the 160 volt supply straight into the bases of the A1 through A13 Q2 transistors on all A1 through A12 RF/AF output modules.

Ted's solution was to install and connect a relay to the junction of the A17 Q2 collector and R12 on the Audio

**Fig. 1: Add this relay to prevent shorted transistors in the MW-1.**



Driver Board. The relay would short this junction to ground immediately upon transmitter turn-off. Using the normally closed contacts of the added relay will maintain a short circuit from the A17 Q2 collector to ground when the transmitter is off.

At the moment of transmitter turn-off, this shorting of A17 Q2 shuts down A17 Q3 and helps to discharge the +160 volt supply through A17 R12. This prevents A17 Q3 from discharging the +160 volt supply into the

A1 through A12 Q2 transistors.

The coil in the added relay is paralleled with the coil of K4, through a 120 ohm 2 watt resistor as shown in Fig. 1. The typical control voltage is +30 volts, and the relay that he used was a 24 VDC octal-base relay. The job of K4 is to activate the main +140 volt supply contactor K2, and discharge the +140 volt supply through R11 when the transmitter is turned off. Ted placed the added relay on the back side of the front door, and ran a wire from it to A17 R12. Ted also decided to leave R11 at 10 ohms for faster discharge.

Make sure you place a diode in the correct polarity across the coil of the added relay.

After making the modification, you should see the PA voltage meter go down and stay down at transmitter turn-off. If for some reason the added relay stays closed, the transmitter will simply not produce a carrier, and will not harm the circuitry. A17 R12 would dissipate around 5 watts, and is rated for 12 watts.

Since his modification, no transistors have been lost.

**O**n the topic of older transmitters, several companies have stepped up to the plate to offer spare parts for models that are no longer serviced by their original manufacturers.

For the RCA product line, visit <http://rca-transmitters.com/>. Stuart Cook has been involved with RCA transmitters since the mid-1970s. He also provides technical assistance.

Paul Gregg still provides support for Elcom Bauer transmitters, with a full line of spares. Bookmark [www.bauertx.com](http://www.bauertx.com).

For CCA, CSI and McMartin transmitter parts, contact Charlie Goodrich in Omaha. Goodrich Enterprises can be found at [www.goodrichenterprises.com](http://www.goodrichenterprises.com).

Know of another good source? E-mail me at [johnbisset@myfairpoint.net](mailto:johnbisset@myfairpoint.net).

John Bisset marked his 40th year 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](mailto: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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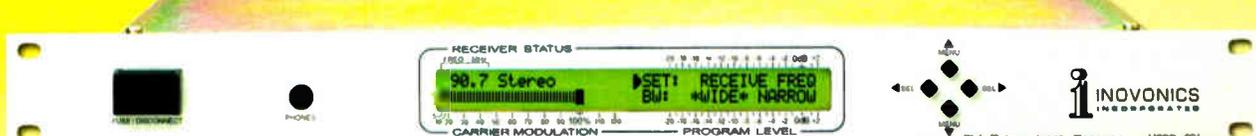
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## CES HD

(continued from page 14)

and MP3/WMA playback. The receiver is available now and lists for \$129.95.

The KD-HDR60 CD receiver features a built-in HD Radio tuner, front auxiliary input, USB 2.0 connection for iPod/iPhone control and iTunes tagging. The unit has MP3/WMA playback capability; it's available now for \$169.95 list.

The Arsenal KD-AHD69 includes the features of the KD-HDR60 and is satellite- and iPod-ready, with front USB port. The unit is MP3/WMA-compatible and available now for \$189.95 list.

### SONY SHIPS FIRST HD RADIO-EMBEDDED UNIT

Sony's first CD receiver with built-in HD Radio, and its first with iTunes tagging, is the CDX-GT700HD.

Available now for around \$180 from Sony and its retailers, the Xplod CD receiver features a detachable faceplate, front auxiliary input, MP3/WMA/AAC playback, built-in HD Radio tuner, EQ3 Stage 2 and wireless remote. A USB 1-wire for iPod, iPhone and MP3 players lets you connect, charge and control a digital music player using the USB jack in the front of the unit, as well as view metadata like song title and artist on the front display.

Users can search and select songs by category including artist, album, genre or playlist. Jump Mode allows the user to fast-forward through a music category in 10 percent increments.

### ALSO OF INTEREST:

— THX II Certified audio systems will be paired with HD Radio and DTS Neural Surround decoding in all Lincoln models in the 2011 model year, THX announced. HD Radio will be available with Lincoln THX systems for the first time. DTS Neural Surround was available as part of a THX system in only one Lincoln model in the previous model year. Neural decoders upmix two-channel music sources to 5.1 channels.



Sony's first CD receiver with built-in HD Radio, and its first with iTunes tagging, is the CDX-GT700HD.

— Clarion introduced in-dash multi-media source units with Bluetooth and iPod capability and feature HD Radio connectivity. The units, models VX400,

VZ400, VZ300, decode HD Radio and feature iTunes tagging with the addition of an HD Radio tuner. They ship to retailers in Q1.

— Sage Alerting Systems and SpectraRep demonstrated delivery of "enhanced" emergency alert messages to HD Radio receivers. They said this was the first public demo of interoperability between SpectraRep's Alert Manager system and the Sage Digital Endec, as well as the first of emergency messaging received by both home and portable HD Radio receivers.

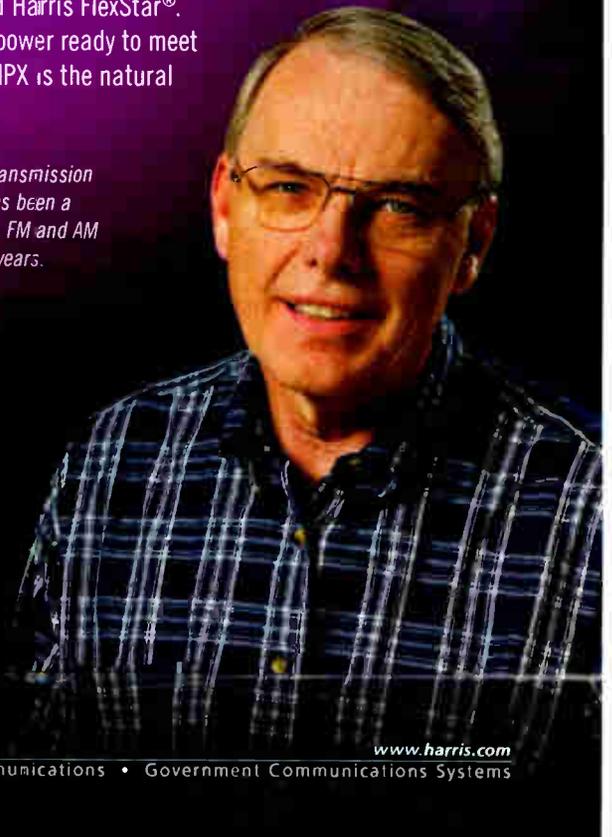
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*Geoff Mendenhall, Vice President of Transmission Research and Technology at Harris, has been a key part of countless, groundbreaking, FM and AM transmitter designs for more than 30 years.*



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**WORKBENCH**  
by John Bisset

EVERY ISSUE  
**RADIOWORLD**

# Escape the Lurking Serpent's Mortal Sting

## Basics to Protecting Your Network From Worms and Other Threats

BY BRIAN CUNNINGHAM

In the Jan. 13 issue I discussed how to keep broadcast equipment protected from intrusions from the outside world, i.e. the Internet. I gave examples of

### **RADIO IT MANAGEMENT**

types of worms and viruses found in unprotected computer systems, what they do once they gain entry and how they replicate.

Here and in our next article, let's take a closer look at various means of infecting your computer and how they work.

#### **WORMS, HORSES AND ZOMBIES**

**Virus:** A virus is a software application attached to or embedded in real programs. Once the program is opened and run, the virus reproduces and attaches itself to other programs or e-mail. Usually viruses will attach to your e-mail messages and replicate themselves by mailing themselves to everyone in your address book.

In some cases the victim doesn't even have to "double-click"; the virus may launch when you view an infected message in the preview pane of your mail software.

Viruses can get into your system if you visit an infected Web site. Most antivirus software will keep your networks safe from this type of intrusion — if you update your software religiously.

**Trojan Horse:** This is a computer program disguised as a game or anything you might want to open; once it is unleashed, it does its damage. A Trojan horse typically does not replicate automatically and usually is not transferred from one computer to the next, as a virus or worm is.

One notable Trojan horse, Clampi, has been gathering banking and financial information and has infected somewhere between 100,000 and 1 million computers. Hackers sneak Clampi onto computers and networks by tricking a user into opening an e-mail file attachment or by using a multi-exploit toolkit that tries attack code for several Windows vulnerabilities.

Once Clampi is active, it monitors web sessions and captures user names, passwords, PINs and other information. It can access bank accounts, purchase goods using captured credit card numbers and in some cases store the information for later use.

Periodically, Clampi will contact the



iStockphoto/Robert Creigh

command and control server run by the hackers to relay the hijacked information home, where it is decrypted and used. It has been determined that these command and control centers are being run in as many as 70 countries.

**Worm:** A computer worm is a small piece of software that utilizes networks and security holes to duplicate itself. As it does so, it is scanning the network for another computer that has a specific security hole, where it copies itself to the new machine and then starts replicating from there.

### **A worm is different than its malicious cousin the virus.**

Imagine a network with hundreds of unprotected computers on it. A worm can infect and duplicate itself within a matter of minutes, depending on its size and what it was designed to do.

A worm is different than its malicious cousin the virus. A worm does not infect or manipulate computer files; it just makes clones of itself and travels from computer to computer using the system transmission capabilities (the network).

A computer does not even have to be connected to the Internet to propagate. It can be injected into a computer via an infected disk or travel drive that contains the worm. Once it is on the host computer, it then begins replicating itself to all the other unprotected com-

puters on the network.

Every operating system has vulnerabilities, and these can be exploited by worms to replicate themselves. A good example is the Sasser worm, which uses security holes in the Windows LSASS service. Other worms spread only by using backdoor-infected computers. The "Bormex" worm relies on the Back Orifice backdoor to spread; Back Orifice is a remote administration tool that allows system administrators to control a computer from a remote location.

There is a facility available within peer-to-peer networks known as the P2P folder that users of the network share. A worm can simply copy itself into the

shared folder and sit there until other users intercept it. If the folder does not exist, the worm creates it for the benefit of the users.

You may recall the names of worms that infected computers in the past. MyDoom, Melissa, Loveletter and Code Red are but a few.

**Robots or bots:** These are networks of PCs that have been taken over by malware programs. A computer infected with the malicious software is called a *zombie*.

Once such software has taken up home in your computer, it can send spam e-mail messages, spread viruses, attack computers and servers and even locate and distribute personal financial information it found on your computer.

A network of computers that have been compromised is a *botnet*. Just what happens when a botnet is installed on your computer is up to the ringmaster. The scary part is, the makers usually don't control the botnets, which are rented out to professional spammers and thieves looking to clean out your bank account.

The botnet usually enters your computer by a virus or worm. The most common way is via e-mail attachment. Once the infected attachment is opened, it will install a botnet client, which then "calls home" to the controller to let them know another zombie PC is ready for duty.

Next time I'll explore more tips for protecting your computer network and the equipment attached to it.

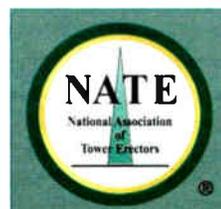
*Brian Cunningham, CBRE, is chief engineer for Crawford Broadcasting's western New York region, based in Buffalo.*

### **MARKETPLACE**

**MOTU:** MOTU has released an upgraded version of its UltraLite-mk3 audio interface, the UltraLite-mk3 Hybrid, a portable USB/FireWire



audio interface. The addition of a USB 2.0 interface is the main new goodie. Features include 10-input software mixer, EQ and DSP (including reverb and compressors, one of which is an LA-2A model), timecode support and the AudioDesk DAW program. Up to 7.1 surround sound can be monitored. Price: \$595. [www.motu.com](http://www.motu.com)



**TOWER GUIDE:** The National Association of Tower Erectors issued a Hazard Recognition Guide for owners, operators and users of tower sites. It entails standards, operating procedures, recognition of hazardous conditions, and safety and OSHA guidelines. NATE Chairman Jim Coleman stated: "Every responsible person on a tower site should have a working knowledge of safe operating procedures and be able to recognize hazardous situations." SBA Communications Corp. and Cellular South helped; the guide is free. [www.natehome.com](http://www.natehome.com)

## WHO'S BUYING WHAT

**Telos Systems** reported sales of Nx6 and Nx12 Talkshow Systems to **KMLE(FM)** Phoenix; **WVIT(TV)** West Hartford, Conn.; **WAFR(FM)** Tupelo, Miss.; and the **U. S. Senate**. Sister company **Omnia Audio** sold Omnia One processors to **Heritage Media** in Leitchfield, Ky., **KABU(FM)** in Saint Michael, N.D., **WPTW(AM)** in Piqua, Ohio and **KNUE(FM)** in Tyler, Texas. And **Axia Audio** provided sales to **Studio 27** in Lebanon, Texas, **WAFR(FM)** Tupelo, Miss., **KWVE Radio** Santa Ana, Calif. and **Bonnadonna Media** in Philadelphia. ...

**Sound Devices** said students in the sound design department at the **Savannah College of Art and Design** are using its digital recorders with the help of the company's U.S. Education Dollars Program, which offers special pricing on certain models to educational institutions. SCAD is employing 30 Sound Devices, 722 Digital Recorders and two 702T Digital Recorders for on-location and studio productions. ...



Student Brent Liotta uses Sound Devices gear in the sound design department at the Savannah College of Art and Design.

**Wheatstone** said **Seattle Public Schools/KNHC(FM)** chose a Wheatnet IP audio network for Phase 1 of a new building project.

General Manager Greg Nieison and Engineer Matt Cohen will use an E4 control surface, three IP-88a Analog Blades, two IP-88ad Analog/Digital Blades, four IP-88d Digital Blades, six AoIP Drivers for sound card replacement on iMediaTouch and various production software, two XYE-R system controllers, an XYE-RD dual hardware controller and Navigator system configuration software. KNHC used local contract engineer **Buzz Anderson** to help with the installation and purchased the equipment through **Broadcast Supply Worldwide**. ...

**Specialty Data Systems** said **Campesina Network** chose SDS for its six radio stations. **KMYX(FM)** in Bakersfield, Calif., **KSEA(FM)** in Salinas, Calif., **KUFW(FM)** in Visalia, Calif., **KNAI(FM)** in Phoenix,

**KCEC(FM)** in Yuma, Ariz., and **KRCW(FM)** in Tri Cities, Wash., installed the broadcast management software. It combines data from sales, traffic, programming, operations and accounting. ...

**Radio One** purchased 52 **Burk Technology PPM Assurances** in the second half of 2009. The PPM Assurance monitors PPM encoding, reports and repairs failures. ...

**Redwood Empire Stereocasters**, a

three-station group based in Santa Rosa, Calif., selected **BroadView for Radio** to replace a legacy traffic system. The traffic and billing radio management system will be the first radio group to receive BroadView's Version 7 release. ...

**Emmis Communications** station **WKQX(FM)** in Chicago purchased a **Nautel NV3.5 FM transmitter** to operate in the digital-only mode to enable a power increase of the HD Radio carrier injection level to -10 dBc. The transmitter will be installed in the Hancock building. ...

**Logitek** sold four **JetStream Minis**, three **Remora-10 consoles** and accessory

items to **Team Radio** stations **KLOR(FM)**, **KPNC(FM)** and **KOKB(AM)** in Ponca City, Okla. The system, to be integrated by **Sierra Multimedia** of Bella Vista, Ark., includes multiple studios and a technical operations center. ...

**NewTek Inc.** said its **TriCaster** portable live production system is being used by the **"Steve Harvey Morning Show"** to live stream video from the nationally-syndicated radio program.

Send news of product purchases or sales to radioworld@nbmedia.com with "Who's Buying What" in the subject line.



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# PADapult and RAMA Are Problem Solvers

ENCO Duo Helps Make Sure PAD Gets Where It Is Supposed to Go

## USERREPORT

BY CHUCK LEAVENS

Director of Engineering and Information Technology  
WDUQ(FM) Pittsburgh and the Jazzworks Network

**PITTSBURGH** — I began using the ENCO Systems PADapult product as it was in development as an answer to a need to get PAD data transmitted to the various media outlets we have at WDUQ and The Jazzworks Network. PADapult has grown tremendously in answer to feedback from users looking for specific needs.

It started as a method of sending RDS and PAD information out of ENCO's DAD automation system. It is now a standalone product that is useful with any automation system.

### RENDEZVOUS WITH RAMA

The basic premise of PADapult is that it listens on a port that you choose, and when it receives information from an automation system or other source it formats it and sends it to 10 other locations. It can be any automation or other system from most

any manufacturer.

The power of PADapult is in the formatting of each sent data stream. Data streams can be formatted differently for RDS, HD Radio, billboards, Web "Now Playing" lists, Twitter and more. Each of those services requires different formatting and custom parameters. PADapult can handle all of them.

I use it to take title and artist information from our jazz network, Jazzworks. PADapult takes the title and artist information from the active uplink server in Denver and sends it to Pittsburgh for distribution.

A single software copy of PADapult is a one-in/10-out device that formats each output for the needs of each location.

ENCO's RAMA takes things a step further.

RAMA is a hardware device that runs up to 10 copies of PADapult at the same time. Users activate the number of copies needed.

RAMA is really a standalone PAD data server. Physically it is a standard 1 RU hardware box. It is able to send and receive data from any automation system or live input; but the difference is 10 separate input and output sets



it can output because of the multiple copies of PADapult running.

In the case of our Jazzworks network the single copy of PADapult at my uplink server sends to Pittsburgh and is received by a RAMA. The output of that data stream is sent to affiliates who wish to receive the data. One copy of PADapult can send to 10 affiliates through a RAMA and they can distribute as they need with a RAMA on their end.

The same RAMA that is sending to affiliates also is taking in primary FM station PAD on a second copy of PADapult and sending it to RDS and HD encoders.

Then the same RAMA takes an HD2 PAD on another copy of PADapult on the hardware and sends that to an HD importer.

Another PADapult copy takes my HD3 PAD and sends it to the importer as well. Different PAD data streams are being received, formatted for the specific intended media and sent to multiple places. RAMA is truly a PAD data problem-solver and PAD data router and server.

Turns out I have more than 10 affiliates wanting PAD data from Jazzworks. I can make up to 10 copies of PADapult on the RAMA device take the same input and distribute it to even more locations. RAMA is a program-associated data server.

The main interface for getting under the hood of RAMA is a Web front end where users can set parameters, ports in and out and formatting, IPs to send to and timed static text to send when no other text is available. That is available for each copy of PADapult running on RAMA.

Additionally there is a separate application with PADapult that allows manual entry of PAD text for those occasions when the automated text won't do.

For information, contact ENCO Systems in Michigan at (248) 827-4440 or visit [www.enco.com](http://www.enco.com).

## Time to Synchronize

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With ESE's Master Clock, you can display Universal Time Code via the 12-channel GPS receiver and generate many types of Time Code (NTP, SMPTE/EBU, IRIG-B, ESE-TC89, ESE-TC90 RS232C/ASCII, & USB), and an extremely accurate 1PPS signal.

You can also easily interface with new or existing computers, automation and clock systems. Visit [www.e-se-web.com](http://www.e-se-web.com) for all your time synchronization needs.

ESE, 142 Sierra Street, El Segundo, CA 90245 USA, Tel: (310) 322-2136

## TECHUPDATE

### BW BROADCAST UPGRADES RDS LINE

BW Broadcast recently overhauled its line of static and dynamic Radio Data System encoders, aiming to offer one to suit every budget.

The original RDS1, RDS2 and RDS3 have been superseded by the RDS100, RDS200 and RDS300



The RDS100 is a simple-to-use rackmount unit for radio stations that wish to broadcast basic "station name" information to their listeners using the Radio Data System. Unlike most RDS encoders, the company says, no PC is required for setup.

The RDS200 supports almost all RDS protocols. It has a real-time clock and memory to support 8,000 characters of text. Programming is simple with the supplied Windows application. The app can be used directly or remotely.

The RDS300 is a dynamic RDS encoder with powerful interfacing features. It supports all RDS protocols and can be connected to radio automation software to display track information. It has an embedded Web server, so it can be remotely configured using a standard browser. The RDS300 can also decode DTMF tones embedded in the audio allowing switching of traffic information and relay outputs.

All of the RDS encoders can either be used in loop-through mode in a broadcast chain or can operate as a standalone unit.

For information, contact BW Broadcast in the United Kingdom; the U.S. number is (866) 376-1612 or visit [www.bwbroadcast.com](http://www.bwbroadcast.com).

# The new Axia IP-Intercom™ System. (Go ahead. Talk amongst yourselves.)



**Now hear this** • If you can hear it, you should be able to record it, edit it, or get it on the air. If you can talk to it, you should be able to cue it and feed it mix-minus IFB. Anything else is tin cans on a string. IP-Intercom puts no barriers between your broadcast audio and your communications channels. Unlimited full-bandwidth access to any studio, news or sports venue, office, hallway, broom closet or latrine — if that's what you're into. Talk and listen to individuals or groups hands-free, with no echo or feedback.

**Gab On Gab Off** • We believe only Hula dancers should need their hands to talk. Broadcast communications ought to be natural and hands-free. That's why the Axia Intercom incorporates **Advanced Echo Cancellation** by Fraunhofer Labs. It literally eliminates open-mic feedback without speaker muting. Just open a channel and start talking. You can use your hands for more important things, like endorsing checks, signing autographs, or Wii bowling.

**Buzz Off** • The last thing you need during a breaking story or transmitter failure is hum and buzz getting between you and the guy you need to talk to. Like all Axia gear, our intercom system is **completely digital** inside and out. Other systems try to make you think they're digital by piping their analog signals over CAT5 cables, but we think that's a bit like putting an abacus app on an iPhone.

## Intercoms Everywhere

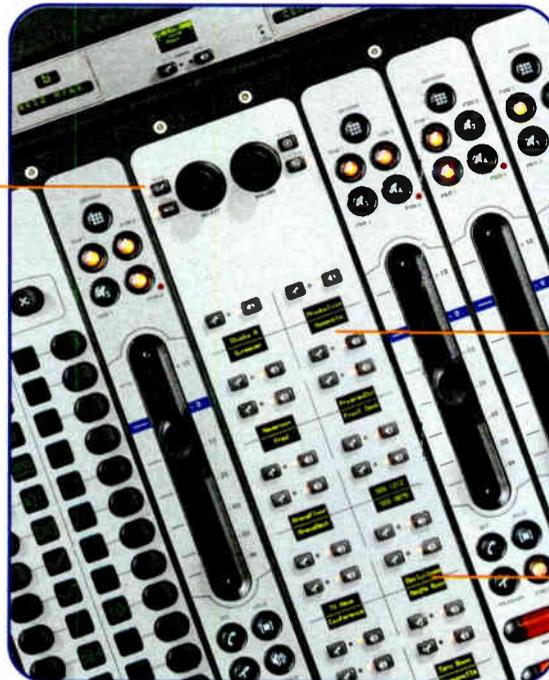
Axia SoftCom software allows anyone with a networked computer to have a virtual intercom station. Just think: you'll never again lose track of who's where when you need them to get on-air or get you coffee.

**We hear you** • As always, Axia has free 24/7 technical support, 365 days a year (**the loneliest support team on earth**). And our warranty is the most comprehensive in the industry – 5 years parts and service. (Really, you should call the technical support guys once in awhile just to say hi.)



## Where there's a wire

The advantages of IP and Ethernet – low cost, easy installation and maintenance, **efficient infrastructure** – are a given. IP links everything, and now this includes your intercom system. Installation is a simple single-click connection. And you can expand it like breeding rabbits. Plug as many stations into your switch as you want and add on from there. Then start talking. And if you move to a new location, no biggie — just pick up the gear and take it with you. IP-Intercom is portable so there's no expensive hard-wired custom-cable multi-pair infrastructure mess to deal with.



## Plays well with others

Don't have an Axia system? That's OK. You can still save money, increase efficiency, and decrease the hard-wired infrastructure hassle by choosing IP-Intercom. It's a stand-alone system with I/O that will accommodate multiple consoles. But if you do have an Axia system, you'll get more operational goodies like **seamless console integration** with these nifty drop-in modules. We're just sayin'.

## Touch that button

So you've gotta be a genius to use it, right? Actually, any acne-challenged intern with an index finger can operate this system with ease. The web interface makes setup simple. Sharp, **high-contrast OLED** displays are easy to read from anywhere in the room. And our clever callback feature makes sure you'll never miss a call, no matter what you're doing. Come to think of it, that intern doesn't even need a finger.

**Family ties** • In the world of Axia audio products, think of IP-Intercom as the talkative little brother. It's an integral part of the family, so of course it **links with existing Axia networks and consoles**. Just connect to the Ethernet with one RJ-45 cable and the intercom is ready to play. In fact, the intercom audio is ready to go directly to air. Or you can feed IFB board audio to intercom callers. The possibilities are endless.

## Matrix: terminated

Imagine a digital intercom system with **no central matrix**. Actually, don't bother. We've already built one that saves on cost, installation time, special plug-in cards, and space. It's real plug and play that works every time — even when you need to add a station, or reconfigure the ones you've got.



AxiaAudio.com

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## TECHUPDATES

### VIARADIO UPDATES RBDS PRODUCTS

ViaRadio's DSP-based RDS/RBDS encoders, VC02 and VC04, now support five IP connections (both UDP and the more reliable TCP) plus four serial connections running simultaneously, so they can handle multiple RDS applications such as Title and Artist, Traffic, Datacasting, Emergency Warning, RT+ and Song Tagging.

The new user interface allows the user to do almost everything from the GUI, eliminating the need for complicated telnet commands, and configurations can be saved as XML files and uploaded from the GUI. The new encoder tree allows user encoder connections to be stored in the application and grouped by region, etc.

The German-made DSP-based encoder features two sets of sync inputs and RDS outputs for main and backup transmitters, jumper-less pass-through mode, four serial ports, opto-isolated inputs and relay outputs. These encoders



support all RBDS features including the new ODA data commands in the latest international UECP 6.01 specification.

ViaRadio's VA20 RBDS decoder also features a new interface and faster processor.

With two MPX inputs and an RF input with up to 60 dB of programmable attenuation, the VA20 is suitable to monitor one station continuously or up to eight stations in rotation from the studio or transmitter site. Different alarms and thresholds for various FM and RDS parameters can be set for each station and

alarms can be reported via e-mail, SNMP or serial with associated contact closure.

With the optional MP3 encoder option users can monitor the audio received by a VA20 from anywhere for signal quality checking or skimming a market.

In addition to the new control interface, each VA20 ships with RDSLab, an RDS monitoring application capable of monitoring the RDS in great detail including decoding of encrypted TMC traffic and RT+.

For information, contact viaRadio in Florida at (321) 242-0001 or visit [www.viaradio.com](http://www.viaradio.com).

### DAYSEQUERRA M3 OFFERS APPLE BUY-BUTTON FEATURES

The DaySequerra M3 is the first HD Radio monitor with Apple Buy Button functionality and can be used worldwide with its 100 kHz FM tuning steps, 50 µsec FM de-emphasis and 9 kHz AM tuning steps.

The M3 contains three AM and FM HD Radio tuners in one 2 RU enclosure, providing a compact and professional unit for digital stations to monitor and alarm their analog, HD-1 and HD-2 through HD-8 multicast signals and data.



Each tuner's vacuum fluorescent display shows station frequency, HD-1 through HD-8 PAD data and analog RBDS/RDS data. Status indicators for each tuner confirm HD Locked, Multicast Available, Delay Set and Tuner Alarm.

As with other DaySequerra modulation monitors and tuners, the company says, audio quality is a primary design feature. Digital-to-analog converters are oversampled, and Class A amplification is used. Each of the three tuners has balanced analog XLR outputs and a transformer-balanced AES3 digital audio output. The digital audio output remains present when the M3 is tuned to an analog station, providing continuous output for monitoring or recording in the digital environment. An integrated front-panel keyboard lock prevents unauthorized changes to settings.

The redesigned M3 now includes front-panel display of the Apple UFID "Buy Button" data, bit error rate (BER) and block error rate (BLER) test results, real-time audio signal-to-noise and carrier-to-noise measurements and HD Radio transmission attributes such as MPA codec and transmitter service mode.

The M3 will provide flat AM frequency response with the addition of a defeatable IBOC AM audio filter. With its new network port and serial port, the M3's module and unit firmware can be upgraded in the field.

For information, contact DaySequerra in New Jersey at (856) 719-9900 or visit [www.daysequerra.com](http://www.daysequerra.com).

## Alert FM Uses RBDS to Deliver Messages

### Emergency Manager Likes the Confidence Of Having a Multiple-Station Platform

### USERREPORT

BY JIM BRITT  
Emergency Manager  
Oktibbeha County, Miss.

**STARKVILLE, Miss.** — As an emergency manager, I strive to use the newest technologies to communicate with the citizens of the county and our first responders.

I began using Alert FM from Global Security Systems two years ago to notify citizens, schools, businesses and first responders of impending weather and other emergency information such as road closures, school closings and post disaster instructions.

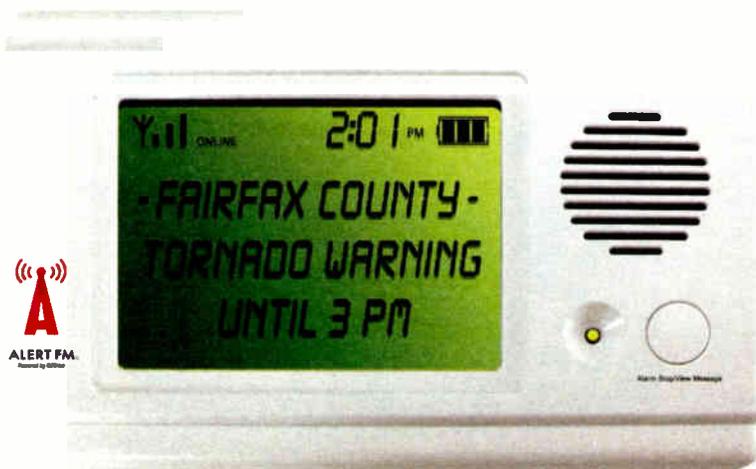
I have been impressed by the message delivery time that Alert FM provides via RBDS signals. Targeted messages are delivered to receivers in the entire county or to a specific group of receivers in less than 60 seconds. This quick delivery is due to the fact that the system delivers messages using the RBDS data subcarrier of FM radio stations in and around my county. Alert FM's use of multiple stations allows me peace of mind because I know that the message will be delivered even if

a radio station is off-air due to storm damage or other technical problem.

Alert FM receivers meet my various needs as an EMA as well as the needs of my citizens. The mobile receiver is

als have access messages sent out via Alert FM, I have placed fixed and mobile receivers throughout my county in various places such as government buildings, schools, universities, daycares and hospitals.

Alert FM and its use of RBDS technology have had a positive impact not only on me as an EMA but on my coun-



great for individuals who travel. The mobile receiver can be placed not only on a desktop but also carried in a pocket as you work throughout the day. The fixed receiver is great for public places such as libraries, hospitals, government buildings and schools. In hope of making sure that critical individu-

ty. We are better prepared for severe weather or any other natural or man-made disaster that might occur. I would recommend this system to anyone looking for added notification capabilities.

For information, contact Global Security Systems in Mississippi at (601) 709-4240 or visit [www.alertfm.com](http://www.alertfm.com).

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The new Telos Nx6 Talkshow System now packaged with a Desktop Director and Assistant Producer call screening software. Call for package pricing.

## *YAMAHA* LS9-16 / LS9-32



Purchase a Yamaha LS9-16 or LS9-32 digital mixing console and get a MY series card of your choice for FREE (up to \$859 value - expires March 31st)

## *ESE* ES-102U NAB Special!

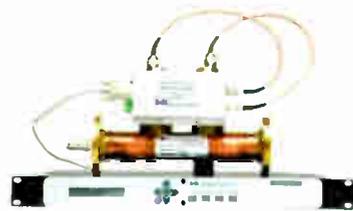


ES-102U: Low-cost yet accurate GPS Master Clock/Time Code Generator. Priced at \$1,199. Special pricing ends May 31st.

## *airtools* Anywhere!



A Multiband Processor you can use everywhere! AirTools Multiband Processor 2M \$2199 MSRP



## Problem Solvers for Transmitters and Studios from *bdi*

**SWP-200:** Calibrated RF Power Meter & RF Switch Controller for Digital and Analog RF applications. Starting at \$1,795.

**ATB-300:** Analog & Digital synchronous audio switcher DA with programmable features. Starting at \$1,995.

**GPM-300:** Analog & Digital 8x8 synchronous cross point switcher with programmable features. Starting at \$2,195.

**DAB-300:** Dual path switch designed for use in digital audio IBOC routing. Allows for synchronous switching of analog and digital audio paths simultaneously. Starting at \$2,495



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**TECHUPDATES**

**ARCTIC PALM ENHANCES MESSAGING FOR CENTER STAGE**

Arctic Palm Technology offers Center Stage Live with CSRDS. It features enhanced message scheduling with the potential to use "RDS Texting" for generating revenue or getting an edge on the competition.

When RDS/RBDS appeared it was limited to a few FM receivers and required the listener to press an Info button to see the text message. Now RDS FM and HD Radio receivers are found in a variety of devices including media players like Microsoft's Zune, Apple's iPod and cell phones. When users add the RDS text to a station's Web site and streaming player, they create additional exposure that can benefit the station's advertisers.

The Center Stage scheduler already had the ability to schedule content outside of the automation system; it has had the option to show advertiser names as commercials play, and schedule messages to various dayparts or as a "triggered" event using a specific message based on a cart number or name and triggered by the on-air system. Savvy users can use

these texting options to enhance advertisers' messages and ad dollars.

Center Stage Live now has more scheduling options to meet that need. The new "length" feature allows users to set the duration of a "triggered" message beyond the duration of the on-air event. For instance, the intro cart for the newscast could trigger the sponsor's message for the duration of the newscast. Without an automation system trigger, the new "Timed Event" will display the message at a specific time of day. It's the station's choice.

The enhanced "triggered day parting" means the same on-air event could insert different sponsors in different day parts or a time-appropriate message for a single sponsor.

Arctic Palm completes the package with a built-in audit report that records each triggered message and the new "Play List History" captures the "now playing" information for the previous 90 days. The Metadata reporting features provide access to view, print or export this information to other applications at any time.

For information, contact Arctic Palm Technology in Ontario at (519) 452-0002 or visit [www.arcticpalm.com](http://www.arcticpalm.com).

**AUDEMAT ADDS RT+**

Audemat's RDS encoders now provide support for the new RDS RT+ radio text functionality, which allows innovative broadcasters to engage interactively with listeners.

While traditional RDS and RBDS data-casting displays details such as a song title or artist's name on the receiver, activating RT+ (RadioText Plus) on the RDS encoder enables the audience to respond actively to the information displayed. Listeners with suitably equipped receivers can use the text display to initiate over 60 actions such as connecting to a Web address, calling a phone number and voting by SMS.

Proponents say this offers broadcasters huge potential for ensuring greater listener loyalty and generating new revenue.

The new RT+ technology is available via a simple software upgrade on many of Audemat's RDS encoding products including the FMB80 and the "Radio All in One" suite of products.

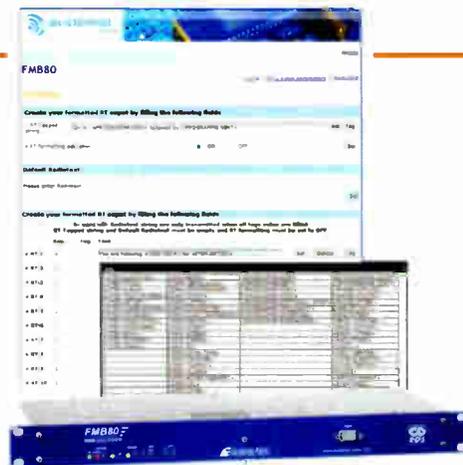
The company has supplied approximately 15,000 RDS encoders to date. Audemat also provides support for Apple's iTunes tagging feature enabling users to download music and content heard on the radio. Once upgraded, an additional software license can activate iTunes tagging capability.

Audemat emphasizes the feature list and robust performance of the FMB80 for RDS encoding. In addition to RDS, RBDS and RT+, it features ODA (Open Data Application), which enables the broadcaster to utilize advanced applications such as Traffic Message Channel (TMC), Emergency Alert System (EAS), iTunes tagging, interactive radio and paging.

Audemat also offers "Radio All in One" products such as the Digiplexer 2/4 and Digiplexer 246 that combine RDS encoding functionality with other broadcast functions such as audio processing, stereo encoding, transmitter remote control, audio backup and transmission in a single rackmount chassis.

This approach delivers savings of cost, real estate, time and energy. The units occupy less space at the transmitter site, draw less power and offer a competitive, cost-effective alternative to purchasing separate devices.

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



**BE HAS NEW TRE DATA APPS**

Broadcast Electronics' Message Manager studio suite, part of its product line called The Radio Experience, has added several text management applications for RDS, HD Radio, Internet and Twitter output.

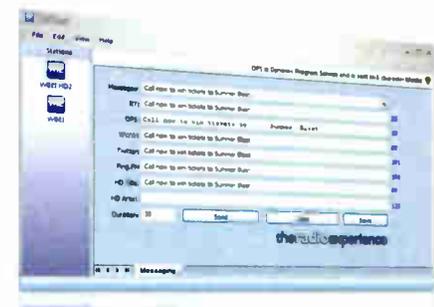
BE says TRE Message Manager originally expanded radio "datacasting" from simple song title and artist readouts to an enriched text experience with displays of sports scores, advertiser phone numbers, show promotions and other features. Message Manager also is already capable of interleaving song information embedded in automation files along with text data generated internally or imported from a third party, such as a weather service.

A recent addition to Message Manager is TRECast, a text application for sending news flashes directly from any or all studios in a station network.

With this application, the company says, TRE Message Manager expands on the immediacy of radio by giving broadcasters the tools to send unscheduled messages such as an urgent weather warning, news flash or live concert details to all or select stations in a region or format category.

News flashes and other common messages can be archived to a message clipboard for immediate access by announcers at any time, and from any station in the network for redistribution on RDS, HD Radio, the Web or Twitter.

For information, contact Broadcast Electronics in Illinois at (217) 224-9600 or go to [www.bdcast.com](http://www.bdcast.com).



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### LATEST AUDESSENCE PROCODER ADDS RDS

The ProCoder-2 from Audessence is a digital FM processor built around ALPS audio leveling technology, adding integral enhanced stereo encoder for FM sites. This model is employed by the BBC World Service as well as numerous smaller broadcasters, the company says.



Features include overshoot-compensated low-pass filters and composite clipper with >60 dB pilot and subcarrier protection. Advanced AGC offers rapid control of levels combined with a novel brightness enhancer for standalone FM applications.

Audessence has unveiled the ProCoder-3, providing the same performance as ProCoder-2 but with integral RDS/RBDS encoder; it is still in a single RU box. ProCoder-3 includes RDS/RBDS encoding features including PC-independent scheduling, addressing of up to 255 encoders for satellite data feed, plus internal battery-backed real-time clock.

For information, contact Audessence/Independent Audio in Maine at (207) 773-2424 or visit [www.independentaudio.com](http://www.independentaudio.com).

### AUDIO PRECISION OFFERS RDS UTILITY FOR APX ANALYZERS

Audio Precision's PC-based MPX-RDS FM radio utility runs in conjunction with its APx Series of audio analyzers. It allows radio broadcasters to create multiplexed and RDS-encoded waveforms for transmitter test and measurement.

The software utility is designed to be used with the waveform generator on the analyzers, which can output any digital waveform at sample rates of up to 192 kHz. Engineers thus can encode RDS signals using the AP utility, and see if their own RDS signals are decoded correctly on a suitable FM receiver.

Audio Precision supplies a downloadable free set of 31 pre-encoded MPX-RDS generator waveforms to run a battery of transmitter audio quality tests.

The MPX-RDS Utility allows users to encode FM test signals containing RDS message text in the form of an eight-character Program Service name, with an additional Type 2A Radio Text message of up to 64 characters. User control is offered over the amplitude of the FM pilot tone and the level of pre-emphasis filtering applied to the audio signals prior to multiplexing — options include the North American pre-emphasis standard using a 75µsec time constant.

For information, contact Audio Precision in Oregon at (503) 627-0832 or visit [www.ap.com](http://www.ap.com).

### INOVONICS UPGRADES RDS/RBDS FIRMWARE TO REV. 3

Inovonics has a Rev. 3 update to the software and firmware for its flagship Model 730 RDS/RBDS encoder.

The upgrade brings increased utility to the ODA (Open Data Applications) function, offering the broadcaster revenue possibilities in leasing a portion of the RDS data stream. The RT+ "tagging" function has been expanded as well, to more easily link listeners to download sites for songs, Web addresses and to telephone numbers for goods and service providers.



The function of the 730's scheduler has been expanded, allowing messaging and RDS commands to be programmed on a calendar and time schedule to match special or repeating broadcast events.

The 730 was launched 2009; according to Inovonics it meets the needs of both domestic and international markets, responding to ASCII and UECP command sets. USB, serial and IP network connectivity ensures integration with station automation and third-party data consolidators.

Rev. 3 updates are available for download by existing users from the company's Web site.

For information, contact Inovonics in California at (800) 733-0552 or visit [www.inovon.com](http://www.inovon.com).



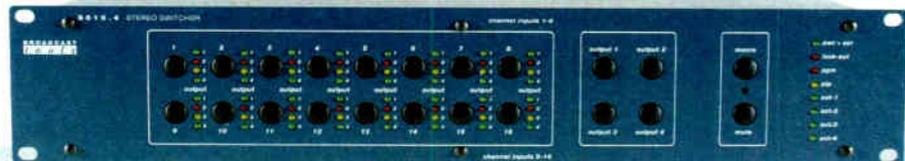
**ACS 8.2 Plus** Audio Control Switcher



**ADMS 44.22** Analog / AES Digital Matrix Switcher



**SS 4.4** Stereo Matrix Switcher



**SS 16.4** Stereo Matrix Switcher

Matrix Switchers



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(5) DC FP balanced to unbalanced converters, \$15/ea; SAE 5000A impulse NR unit, \$20; ADC Stereo frequency EQ, \$15; Pyramid stereo graphic EQ Sen-8600, \$15; all + s&h, [mraley@bbnmedia.org](mailto:mraley@bbnmedia.org).

### WANT TO BUY

Teletronix LA-2A's, UREI LA-3A's & LA-4's, Fairchild 660's & 670's, any Pultec EQ's & any other old tube compressor/limiters, call after 3PM CST - 214 738-7873 or [sixtiesradio@yahoo.com](mailto:sixtiesradio@yahoo.com).

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Equipment Wanted: obsolete, or out of service broadcast recording gear, amplifiers, preamps, outboard, radio or mixing consoles, microphones, etc. Large lots acceptable. Pickup or shipping can be discussed. 443-854-0725 or [ajkivi@gmail.com](mailto:ajkivi@gmail.com).

I'm looking for San Francisco radio recordings from the 1920's through the 1980's. For example newscast, talk

shows, music shows, live band remotes, etc. Stations like KGO, KFRC, KSFO, KTAB, KDIA, KWBR, KSFX, KOBY, KCBS, KQW, KRE, KTIM, KYA, etc. I will pay for copies... Feel free to call me at 925-284-5428 or you can email me at [ronwtamm@yahoo.com](mailto:ronwtamm@yahoo.com).

Looking for a broadcast excerpt of a San Francisco Giant's taped off of KSFO 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 KSFO Radio. Ron, 925-284-5428 or [ronwtamm@yahoo.com](mailto:ronwtamm@yahoo.com).

Looking for KFRC signoff radio broadcast from 1930 Andy Potter, running time is 0:22 & also the KLX kitchen the program guest is Susanne Caygill, a discussion of women's affairs with a long promotion for Caygill's appearance at a local store. Anne Truax, Susanne Caygill, running time is 13:44. Ron, 925-284-5428 or email [ronwtamm@yahoo.com](mailto:ronwtamm@yahoo.com).

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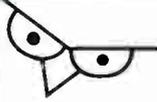
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Details about this position and how to apply can be found at: <http://jobview.usajobs.gov/GetJob.aspx?JobID=85469772>

If you have questions regarding this position (Radio Broadcast Technician – Maintenance announcement (BBG-10-005) please contact: Leslie Brown (202) 382-7500

#### QUALIFICATIONS REQUIRED:

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# The Audience Is Waiting. Appeal to It!

No Other Medium Can Present Local Events In Such an Immediate, Accessible Way

BY JERRY D. BURLING

Scott Taylor wrote in the Jan. 1 issue about "AM, Losing Its Grip on Reality."

## COMMENTARY

In my opinion he is correct that terrestrial broadcasting, specifically AM radio, is being challenged by new technologies, especially from those offered by the Internet. He also is correct in stating that mom-and-pop AM operations are losing out to these new competitors.

It has been stated that anyone who does not flow with advancing technology eventually will be eaten up by it.

I am a contract engineer and recently was involved in a project at a television station. Its master control system consisted of five computers running two on-air television stations and three cable channels. This was a one-person operation. No more on-air switching by humans. The same is happening to radio. Automation has come a long way from its beginnings. With careful planning, a station can sound almost as real as if live humans were operating it.

However, mom-and-pop operations such as small daytime-only stations usually do not have the luxury, or the funds,

for automation or music license fees, so they are left to fend as best they can with whatever they already have.

### IMAGINE THAT

In the same Radio World issue, Harry Hoyler, general manager of KKAY(AM), White Castle, La., wrote a letter headlined "Our AM Does Quite Well, Thank You." He said his station serves the public interest in the community in which his station operates.

What does "community service" mean? People who live in a community want immediate local news and sporting events, local traffic conditions, local government happenings, other special local news activities and on-air editorials.

One daytime AM station where I was employed would tape high school football games on Friday nights and play them back on the air the next day.

Play back a high school game the next day when everyone is aware of the outcome? What kind of nonsense is this? Sounds crazy, doesn't it?

Well, the station ended up with a waiting list of sponsors who wanted to advertise during the games. Even though people were aware of the final score, the players still wanted to hear their names, or the parents wanted to hear their children's names, on the air.



istockphoto/Merced Bellera

The program had a very large audience, was very popular and went on for years, making a lot of money.

If operated properly, local remotes also can work. This same station would do a remote broadcast from, say, a paint store. Every 20th person who walked through the door would receive a pound of butter or a pound of bacon. The stores were always packed with people, some of them purchasing paint or whatever products the store had for sale.

### GET INVOLVED

In another instance, the local news-

paper was concerned that a radio station would cut into its circulation. The relationship was becoming adversarial. So the station manager starting purchasing a copy of the paper when it was delivered at 5 a.m. and reading the first few lines of each story on the air. He made sure not to read too much of each one; and he told his listeners that if they wanted to know more to purchase a copy that morning's paper. As a consequence, the circulation of the paper increased and its owner became a good friend of the radio station.

One station drastically reduced its advertising rates to be more competitive. It then was swamped with advertisers, actually taking some away from its competitors. Management felt that 50 percent of something is worth more than 100 percent of nothing. And the station sounded successful to potential sponsors because it was already full of advertisers.

One gimmick would be "Buy one spot from us, and get another one free." Everyone likes freebies, including sponsors.

But sitting around at a console, playing records on the air, with no sales staff and no local community service, simply will not work — as the operator of the plywood-shack AM station in Mr. Taylor's article was finding out.

Get involved in the local Chamber of Commerce. Let them know that your station's advertising rates will be adjusted to be fair to everyone, and that you are there to assist in any natural or man-

(continued on page 34)

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**READER'S FORUM****THE POTOMAC PI 4100**

About the Potomac AM field intensity meter and Cris Alexander's review ("PI 4100 Takes to the Field," Jan. 1):

His thumbs-down for battery life is spot on. When doing AM directional antenna proofs, you do require more stamina than 5 hours of battery run time. Or the unit should have been equipped with a fast warm-start GPS receiver to permit battery conservation by powering the unit down between measurements without suffering the reacquisition time penalty of the present unit. Why choose to provide NiMH batteries, which have poor shelf life due to rapid self discharge rate, when lithium ion would have provided twice the run time and almost no self discharge?

His criticism of no built-in mapping or routing is inappropriate as the GPS is meant only to document the measurement point. A built-in mapping database would require frequent database updates and would risk the entire unit becoming obsolete in a few years; GPS receivers are evolving rapidly. One would hope that a \$15,000 investment would last at least as long as a FIM-41.

I've always had to use two GPS receivers when out in the field with a FIM-41, one unit for map navigation and the other set to the center of the tower array to provide radial line and distance indication for the actual measurement. At least with the PI 4100 it would eliminate the juggling of two GPS units.

It is a pity a \$15k instrument doesn't come with a decent color display when a \$50 cell phone does. An OLED display probably would not draw a lot more power than a backlit monochrome LCD but it would have superior cold-weather performance characteristics.

And why the step backwards with the molded-in loop antenna that cannot be folded to make for a safe, compact package for storage and shipping? You require a screw driver to disassemble it from the main case.

Why provide only a USB interface when a wireless Bluetooth or Wi-Fi link would allow one to download the data into a notebook computer instantly for evaluation in the field? It would also provide an enhanced means of programming the PI 4100 without resorting to the limited keys on the unit itself.

Finally, and this was my gripe with the original Tektronix 2710 spectrum analyzer, why saddle an expensive instrument with a cheesy membrane keyboard? Tektronix was quick to release an updated version after much criticism, model 2712 with real keys.

*Ira Wilner  
Chief Engineer*

*Monadnock Radio Group - Saga Communications  
Keene, N.H.*

*The author is an occasional contributor to Radio World; opinions are his own.*

**LET'S BE PERFECTLY CLEAR**

I thoroughly enjoy reading RW, and Cris Alexander has written some great articles. His piece about the Potomac 4100 was no exception.

He mentions that it can be used to "facilitate compliance measurements (field strength, harmonic level and spectrum occupancy)." I am concerned the phrase "facilitate" may be confusing with regard to spectrum occupancy "compliance." Though it could be used as a reference, there are key features/specifications it lacks in order to prove compliance with FCC (NRSC) requirements. This means it would not be acceptable to use the PI 4100 for the annual FCC required AM occupied bandwidth measurements (NRSC compliance measurements). The most obvious is the lack of a 300 Hz RBW (resolution bandwidth) option. The minimum resolution is 1 kHz RBW.

The specifications do not indicate it has the 10-minute peak hold capability, which is also an important requirement.

The meter would be a great purchase for someone needing a new one with many capabilities, but not to perform NRSC compliance measurements. I just want to save anyone the disappointment of finding out the expensive new meter they bought can't be used for their NRSC measurements, especially if that was one of the major justifications in making the purchase — or worse, inadvertently subjecting themselves to a FCC fine for noncompliance.

*Del Dayton*

*Dayton Broadcast Engineering  
Eau Claire, Wis.*

**BURLING**

*(continued from page 33)*

made disasters that may befall the community. Make friends with local community business and government leaders.

As far as music license fees are concerned, both sides of the issue appear to be benefiting from playing music on the air. The stations get free material to play; the record companies get free air plugs for their products. A free exchange, with no money changing hands. What could be fairer, or simpler?

No other medium can present local events in the immediate, easy and accessible way as terrestrial broadcasting can. The Internet cannot. Turn on a radio within the range of a transmitter and there it is. The audience is waiting. Find it and appeal to it. Come on, folks! Serve your local communities, or sell your broadcasting operations to someone who will.

*Jerry D. Burling, CSTE, is a contract engineer in Long Beach, Calif.*

**FULL OF HOT AIR?**

As a 24-year employee of a growing and thriving small-market radio group, I can provide a compelling counterpoint to Scott Taylor's cynical, misinformed, self-important, delusional opinions ("AM, Losing Its Grip on Reality," Jan. 1).

For the record, four of our six stations are AM; we sit at real desks in our six office locations; our laptops are wireless.

We have state-of-the-art production and transmission equipment, talent that rivals — no, surpasses — many major markets and one of the brightest, most creative and savvy marketing teams in the country.

We succeed in spite of ignoramuses like Mr. Taylor trying to put a chink in the armor of one of perhaps the most timeless, cost-free, valuable information and entertainment industries in the world.

When another venue comes along that can go along on road trips, be used in offices without being considered goofing off, help people connect during times they are virtually cut off from the world by weather, immobility or other tragedy, and offer current information within a split second of it happening, and *free* to use, then maybe I'll begin to worry ... but I doubt it!

*Paula Triplett  
Station Manager  
WCGR(FMIAM)*

*Finger Lakes Radio Group  
Canandaigua, N.Y.*

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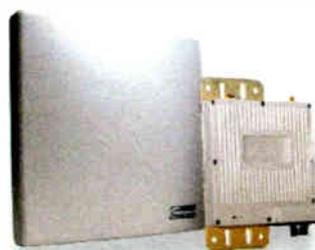




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