RADIO SHOW ORLANDO — Page 14

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Shuman Eyes Evolving Digital Dash

Automotive consultant says dashboard changes present opportunities for radio

CHICAGO — Valerie Shuman has worked in the automotive space for more than 20 years. As a management consultant and an executive of the Connected Vehicle Trade Association, Shuman is right in the middle of the evolving digital dashboard discussion.

She's worked on standards efforts for intelligent transportation systems, and helped Navteq transition from delivering map content via CD-ROM to an online content delivery system.

Shuman was helping plan CVTA's fall conference in Novi, Mich., when Radio World News Editor/Washington Bureau Chief Leslie Stimson caught up with her to discuss the connected car and radio's place in the digital dash.

Valerie Shuman

RW: In addition to being the principal of the Shuman Consulting Group, you're vice president of industry programs for the Connected Vehicle Trade Association. Please tell us about this group.

Shuman: The association is a not-for-profit dedicated to the deployment of connected vehicles. When we say "connected vehicles," we're actually talking about cars talking to cars and cars talking to infrastructure. A lot of it is [centered] around safety types of applications and solutions.

The CVTA believes that the way to get these systems out there is to make connections between the people who need to be connected at the business level, to help those networks happen and … serve as a meeting point for the ecosystem as it evolves.

RW: So car capabilities of the future and safety issues?

Shuman: Right. There's a lot of different pieces to all of that. Some pieces you're seeing out there already, things like maintaining headway from the car in front of you, and lane-change type

(continued on page 3)

OUR 'CONNECTED CAR' ISSUE!
Radio seeks to find another gear. See commentaries on pages 52 and 54.

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SHUMAN

(continued from page 1)

of things where your car looks around and says, "There's a car coming. Don't change lanes." Those kinds of things typically are systems that exist within the vehicle itself. ... There are radar and all kinds of other cool technologies that make those happen.

There's *another* set of capabilities that can happen if the cars *can* talk to each other. They can tell each other where they are in some very advanced and very specific ways. Say you're coming up to a traffic light. Somebody else blows [through] the light. You wouldn't have had any way of knowing that he was going to do that, but your car heard his car say, "Hey, I'm coming through." And you get a warning that says, "I know the light turned green, but wait a minute." Obviously, no one's encouraging anybody else to blow lights, but there are situations like that. ...

Perhaps someone else is coming up behind you real fast and they may not be able to stop. Their car can help them stop by recognizing where the other car is, and say, "Wait a minute. That guy's going 45 miles an hour. At this speed, there's no way we're going to stop if we don't hit the brakes *now*," and let the driver know, "Hey, mister, get on the brakes." Or in the more advanced cases, hit the brakes for you.

The other piece of this that gets pretty exciting is there's a lot that can be done if the cars are talking to the roadside. If your car can talk to the traffic light and know, "It's going to be red in three seconds. Don't try to make it through. You're not going to get through."

Photo: Arbitron

Valerie Shuman discusses the connected car at an Arbitron Client Conference.

your spot at the grocery store.

There are those kinds of things that are already out there. You can buy them.

And there are these other things that require a much more complicated system, because as you can imagine, there's a lot of technology and policy and standards that have to go into it if you're going to get cars talking to cars. Those are under test. The Federal Highway Safety Administration has work going on, and every major car manufacturer is working with them one way or another. There's work going on in other countries as well, including Japan, Europe and Korea.

***RW:** How does radio fit into all this?*

Shuman: Where radio comes in is the other definition of connected car — the one that is less about safety and more about entertainment and convenience. [It's] all those things that allow people to bring their connected lifestyle along with them when they're driving, the same way that they bring their connected lifestyle with them everywhere else. ...

There's an interest in connecting your smartphone to your car. There's an interest in having the car *itself* have connections to the outside world that allow you to use things. So there's a lot of new technologies that are getting put in place. ...

One of the things that you can do now is get access to lots of other media. So our friends in the streaming radio business and the satellite radio business are jumping all over this opportunity to serve the consumer.

Where radio lands is sort of right in the middle. Radio already *is* in the car. The fun part is to look at the new opportunities and see what new things can be done while remaining interesting to consumers in the face of new competition for the consumer's attention while he's in that car.

***RW:** Who are radio's competitors in the dash now and who could be there years from now?*

Shuman: It's the streaming radio folks, so the folks who are bringing information into the car over cellular connections like Pandora, Spotify and certainly SiriusXM. And you know there are upcoming additional folks in the stream-

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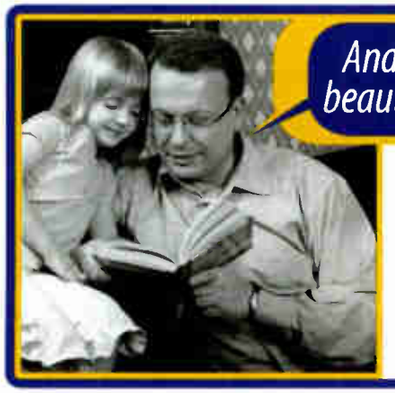

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Esayian: A Focus on Digital Is 'Imperative'

Marketron seeks to participate in industry's 'monumental sea change'

Marketron, which provides business software solutions and services for the media industry, recently named Deborah Esayian chief revenue officer, adding to her duties as co-president of Marketron Interactive. She will thus oversee the sales and business development operations of all three of Marketron's product lines including radio traffic, mobile and interactive. She has 19 years of experience in advertising, media and software technology; she founded Next Generation Radio, a new business development enterprise, and has managed radio stations and sales teams.

As part of a series of interviews for our sister website Connect 2 Media & Entertainment, I asked Esayian about trends in the business. (Visit the site for lots more interesting content; find it at c2meworld.com.*)*

Deborah Esayian

McLane: *What is the single biggest challenge facing U.S. radio commercial companies right now?*

Esayian: Balancing the need to invest in the future with the financial challenges of today's environment.

McLane: *You've been named chief revenue officer of Marketron. How does this change your current responsibilities; and why is this change important?*

Esayian: For close to a year we've been working to consolidate our efforts across all three of our product lines — Traffic, Interactive and Mobile. This change allows us to carry the ball further down the field in working as one team to holistically address the needs of our clients.

This is important because our clients have limited time and resources — our products and services drive efficiencies, productivity and revenue — all for a great value. The more our customers work with all of our software applications, the more efficient and lucrative their operations become.

McLane: *How has Marketron's corporate culture and approach to business changed since Jeff Haley started as CEO a year and a half ago?*

Esayian: Jeff has a client-focused style in which he fosters partnership and creative solutions. He is a terrific relationship builder and has set the tone that nothing is unachievable or impossible.

McLane: *Mobile is part of your purview, and Marketron has put a lot of emphasis on that in recent years. Assess how well the industry has integrated mobile into its business strategy.*

Esayian: We're seeing greater and greater interest in mobile as the consumption on mobile devices continues to skyrocket. Stations want the capability to stream, podcast, offer apps to their audiences and present content and experiences on mobile devices. Marketron Mobile has launched two products — mSite, our mobile website software that empowers stations to make and create mobile sites for clients, and Scratch and Win, our mobile gaming solution, which offers broadcasters a sophisticated advertising solution for their clients.

McLane: *You also have held the title co-president of Marketron Interactive. The digital arena is one piece of the commercial revenue picture that has shown consistent growth, on a percentage basis; yet it remains a small part of our industry's revenue pie. How can radio grow the digital piece more dramatically?*

Esayian: I remember when industry executives would say to me "I can't focus on digital — it's only 3 percent of my revenue." As the years passed, the 3 percent became 5 percent, then 7 percent and now is 10–15 percent at many companies.

I've worked with hundreds of stations helping them develop their digital businesses, and the one consistent driver of success has been having an internal change agent leading the charge and marketing the opportunities internally as well as externally. Companies must give their internal change agent an environment in which to succeed, which means they must incent the desired behavior change across all personnel, not just sales, and provide the resources they need to succeed — good technology, training and management support. There is an investment required — but with a sound revenue generating plan, that investment should pay out within 12–18 months.

Given that we're experiencing a monumental sea change in our industry, it's imperative that all broadcasters put a serious focus on digital.

McLane: *How is the radio industry doing at providing ad verification and accountability?*

Esayian: I believe the industry has always shown extraordinary accountability to the advertising community. Today, the software exists to provide even more transparency. Our Proof of Performance service, for example, provides scheduled, aired, posted and invoiced spot information that can be emailed to advertisers and agencies on demand or on a pre-determined schedule.

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'The one consistent driver of success has been having an internal change agent leading the charge and marketing the opportunities internally as well as externally.'

FROM THE EDITOR

Paul McLane

World Radio History

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ing radio space — Apple iTunes iRadio has announced that they're coming in. I think it's reasonable to expect a continued interest by folks in getting into the business of providing consumers with what they think consumers want.

Audio entertainment is absolutely a part of what today's consumers want in their vehicles.

RW: *In every car at CES, when their big-screen infotainment system would come up, Pandora was on the first display. How can AM/FM stations make sure they're on that first screen that pops up and not buried in a menu that you have to keep tapping to get to?*

Shuman: The most fundamental answer to that is making sure you are of value to your consumers. If the consumers want to have access to that content easily, they will let their car manufacturers know because they'll complain if they can't get to it.

If consumers aren't using it and the feedback that the car companies get is, "Well, you know, X percent of consumers still use this, but pretty much everyone else is using the other stuff," well, then it kind of starts to fall off the big-screen. It really comes down to staying interesting to your customers, which is a fundamental business thing that you're supposed to be doing anyway.

RW: *You're in touch with the automakers. Do you talk to them about what they're hearing from consumers, what they want for infotainment in general and radio specifically in the car?*

Shuman: You don't talk a lot about radio in the automotive space. I know that is never a warm and fuzzy sounding thing when I say that to a radio person. But from the consumer's perspective, cars come with tires, doors and radios. They don't really come in and say, "Is the car going to have a radio?" They assume that there's going to be a radio in it. What they are coming in and saying is: "Does it have all of this new stuff? Can I play my Pandora? Will I be able to sync my phone? Does it have this new functionality?"

We're seeing that very, very strongly. Of the people who buy these systems, a majority say that the system *was* a deciding factor for them to buy that car.

From a car manufacturer's perspective, when they hear from their dealers that people are coming on the lot and saying, "I want the car that has the Ford Sync in it. I don't know which car it is, I just want the one with the Ford Sync in it," that is a very, very big deal.

That's why you're seeing so many of these systems getting pushed out so fast, because consumers have asked for them. Car manufacturers are, of course, going to respond to what their customers say they want.

RW: *Are consumers talking about HD Radio at all? More automakers are including it in more of their product lines.*

Shuman: In terms of what are consumers saying, I have not personally done a study. I think there are folks out there who have done that and would defer to them about the latest feedback they're getting.

In terms of what the car manufacturers are saying, the feedback I get, and this is anecdotal and casual, but as I tell my friends, "Hey, I'm working with some FM broadcasters. There is this idea that, of course you would go HD because the natural progression of things is from analog to digital. Everything's going digital, right?" Which, of course, is not the perspective in the radio space necessarily, but you certainly do share that type of idea on the car side.

The other thing that HD does have, which is appealing right now, is that as the car manufacturers are putting together these systems with polished-looking screens, HD is able to fit into that environment pretty nicely. It looks good and it

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ESAYIAN

(continued from page 4)

McLane: *What is the "Marketron Triple Play"?*

Esayian: Customers who use products from all three of our Marketron product lines — traffic, interactive and mobile — will enjoy loyalty discounts and holistic customer service.

McLane: *Anything else we should know about Marketron's current direction and offerings?*

Esayian: I think you will see more and more integration of our product lines over time. The benefit will be sharper, consolidated and more actionable data about customers and listeners coming from an affordable, customizable, easy-to-manage software system everyone at a station will use.

World Radio History

SHUMAN

(continued from page 5)

has some functionality that lends itself to integrating some of those things in ways that are useful. I think, to give credit where credit is due, is that iBiquity has done a really large load of work promoting their solution to the automakers and really getting in front of them and giving them a strong awareness of it.

RW: *Being debated within the radio industry is: Do consumers know they have HD Radio in the dash? Some station owners are wrestling with how can they make consumers more aware of HD Radio so they listen to the digital stations and not just plug in their iPod or listen to Pandora or satellite radio.*

Shuman: That kind of goes right back to that whole discussion of, there's competition there now. If you watch a car ad, you will see them promote lots of screens that have Pandora and HD Radio on them. If you do that enough, consumers start to pay attention.

There is definitely a challenge in staying in front of consumers and how things are perceived. Everybody fights that battle every day.

RW: *You took part in an NAB Broadcast Engineering Conference session this spring; the panelists agreed it's a "Wild West" in the dashboard right now, with automakers and app developers and device makers all grappling with connectivity. Every automaker is implementing the digital dash differently.*

Shuman: The thing to remember about all this is even with the enormous amount of buzz and excitement, it's very early days. iPhones have only been out since 2007. That's two car cycles. It takes about three years to spec and build a totally new car model.

You can get technology in there a little faster than that, depending on how you design things. But Ford was really in the right place at the right time with their Sync system because that came out right about that time. But not all of the other car manufacturers had something like that, and Sync was first out of the box to the consumer.

Six or seven years in car time is not very much time. In consumer electronics time, of course, it's a billion years ago.

It's really, really early; so there have been a lot of new systems that have come out very quickly, but it's going to take a little time for people to figure out exactly what consumers are doing with all of this stuff that we're giving them, and exactly what they are going to value.

RW: *Given all the change in the dash, will AM and FM always be there?*

Shuman: It comes right back to that point, does the consumer want you there? If nobody ever turns on their FM radio, then one day you will go the way of the 8-track. If, everybody keeps turning on their FM radio, then, why would you take away something your customer wants?

RW: *Love the 8-track reference…*

Shuman: As long as you've got your consumer saying, "Yup, I want that," then you're good. If the studies start coming back, and we're discovering that 99.9 percent of Americans never touch that dial, then you've got a problem. But, I think we're a long, long way from that.

And I think it's too, *who* are your consumers, *what* are you providing them, are they finding value in it. … At the end of the day let's remember that you're supposed to have your eyes on the road. One of the reasons that audio entertainment is such a big deal in the car is because you don't have to look at it.

RW: *Ford is pulling back a little on the whiz-bang features of Sync and returning the radio knob because people want it. What do you think about that?*

Shuman: One of the hardest parts [to design] is that human-machine interface. You're trying to maneuver through traffic and you're also trying to pick your station from a menu. If you look across the different systems that are in the market right now, there's a pretty diverse range of interfaces. You have touch interfaces, voice, gesture, knobs, buttons, screens, you name it. People are trying all kinds of things to get to something that is easy to use.

Speaking as someone who has watched this evolve over the last two decades, that's really hard. You'd think, and as important as it is, and as hard as we've all been working on it, somebody would have knocked it out of the park. … When you see a situation where someone says "Alright, fine, we'll go back to the thing we *know* people know how to use, that's not a total shocker.

RW: *Switching to the FM chip, Sprint has incorporated FM capability in two HTC model smartphones and says more are coming. What are the implications for radio in the car?*

Shuman: I don't have a huge opinion-type answer to that. I think it's another way for people to listen to the radio. The question, again, comes right back to, will consumers use it? You can put all the chips you want in anything you want, but, it doesn't mean that consumers are going to push the button.

RW: *A harsh reality …*

Shuman: I spent a lot of time on the front lines in private-sector companies trying to make money, and I've also seen a lot of these companies … fail. You really have to keep a very clear eye on what your customer is doing, because if your customer isn't going to do what you want them to do, or, you don't have a value proposition — a business model that plays out well over time — it's not going to work.

RW: *How did you get into this line of work? You've been involved with marketing for awhile. Have you always been connected with the car?*

Shuman: My activities in this are 110 percent serendipity. When I was starting out, my first summer as a summer intern, I ended up getting a job with a company that was closely affiliated with Navteq, one of the digital map providers. Nokia bought Navteq a couple of years ago.

In order to sell digital maps, you needed a market to sell them to. And I ended up being part of the effort to build the industry and sell the product. So I've been involved in intelligent transportation activities since my first summer working, which is over 20 years ago now. …

The car is a fundamental environment but there's all these new things coming in and connecting with cars in various ways over time and there's always new industries, and new concepts and new products and services and new opportunities. As a consultant, that's where I live. It's right in that new zone where people are trying to figure out how do you do this? What can we do? How do we make money?

Which is why, as you and I are having this conversation, the whole discussion around radio really resonates a lot, in particular because of the work that I did at Navteq on content. Maps are content. Radio is content. And really looking at, how do you take this content and get it in front of consumers and make money?

Comment on this or any story. Email radioworld@nbmedia.com.

MORE DASHBOARD

This is one in a series of articles about radio's role and future in the evolving automobile dashboard. To read other articles visit http://radioworld.com/dashboard.

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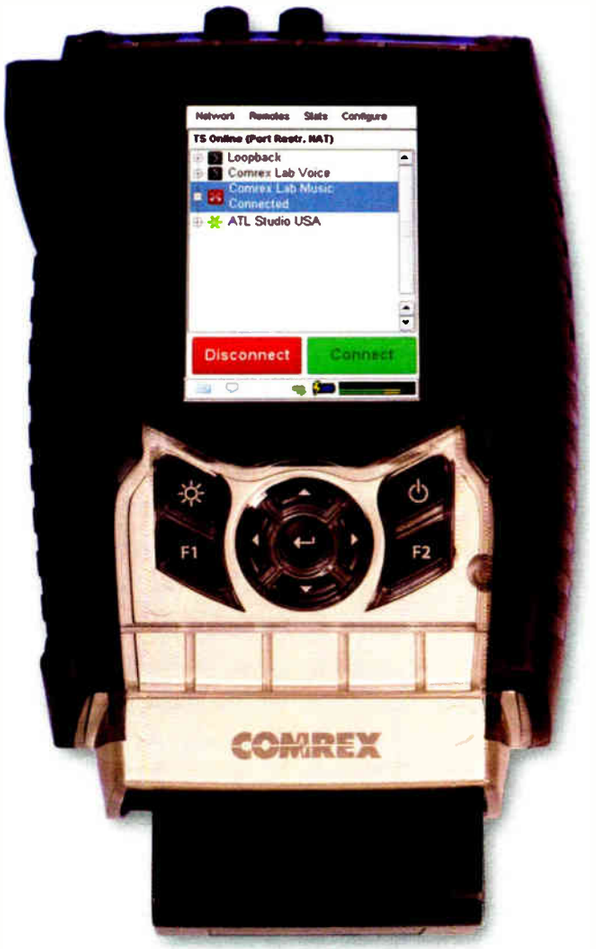

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HD With Artist Experience, Close Up

Engineer looks at implementation of AE and RDS in GM vehicles

DIGITALRADIO

BY ALAN JURISON

In the past few months I've made several business trips to Los Angeles. Invariably these trips require renting a car, and I have been lucky to have been upgraded to a 2013 GMC Acadia or its closely related sibling the Chevrolet Traverse. Both are made by General Motors and offer HD Radio with Artist Experience as a standard feature.

I have always taken an interest in new radio receiver technology; these days my work with Clear Channel Media + Entertainment has me involved with it more than ever. That being said, it's nice to finally see a product or feature the industry has been waiting for actually realized in a final product.

What's more, since GM is offering these as a standard feature in 2013 and presumably future models of this vehicle, obtaining one of these radios for evaluation or purchase is now easier. I have seen this receiver on the demonstration floors at the Las Vegas Convention Center during CES and NAB. It's one thing to have a few minutes in the car at a trade show, quite another to drive the vehicle for a few weeks.

Photo by Alan Jurison

A typical implementation of HD Radio with Artist Experience in a 2013 GMC Acadia and Chevrolet Traverse. Both GM vehicles offer HD with AE standard. The author was listening to KBIG(FM) in Los Angeles when he took this photo.

IMPLEMENTATION

Focusing on the receiver itself, GM has done an excellent job with its implementation.

The tuning knob, volume controls and touch screen are responsive. It's easy and intuitive to set an HD1 or HD2 station as a favorite. The integrated steering wheel controls also allow you to scan stations, presets and change volume with ease. My only complaint is the soft buttons at the bottom of the radio to control the unit take some getting used to. Because the soft keys don't provide any tactile response when depressing them, it takes some time to master their use.

Also, GM provides some tactile bumpers near these soft keys to help you find them while driving, but those bumpers were confusing to me at first. I thought I had to press those silver bumpers, but it turns out you have to touch the "Menu" or "Seek" labeling instead to get the appropriate response.

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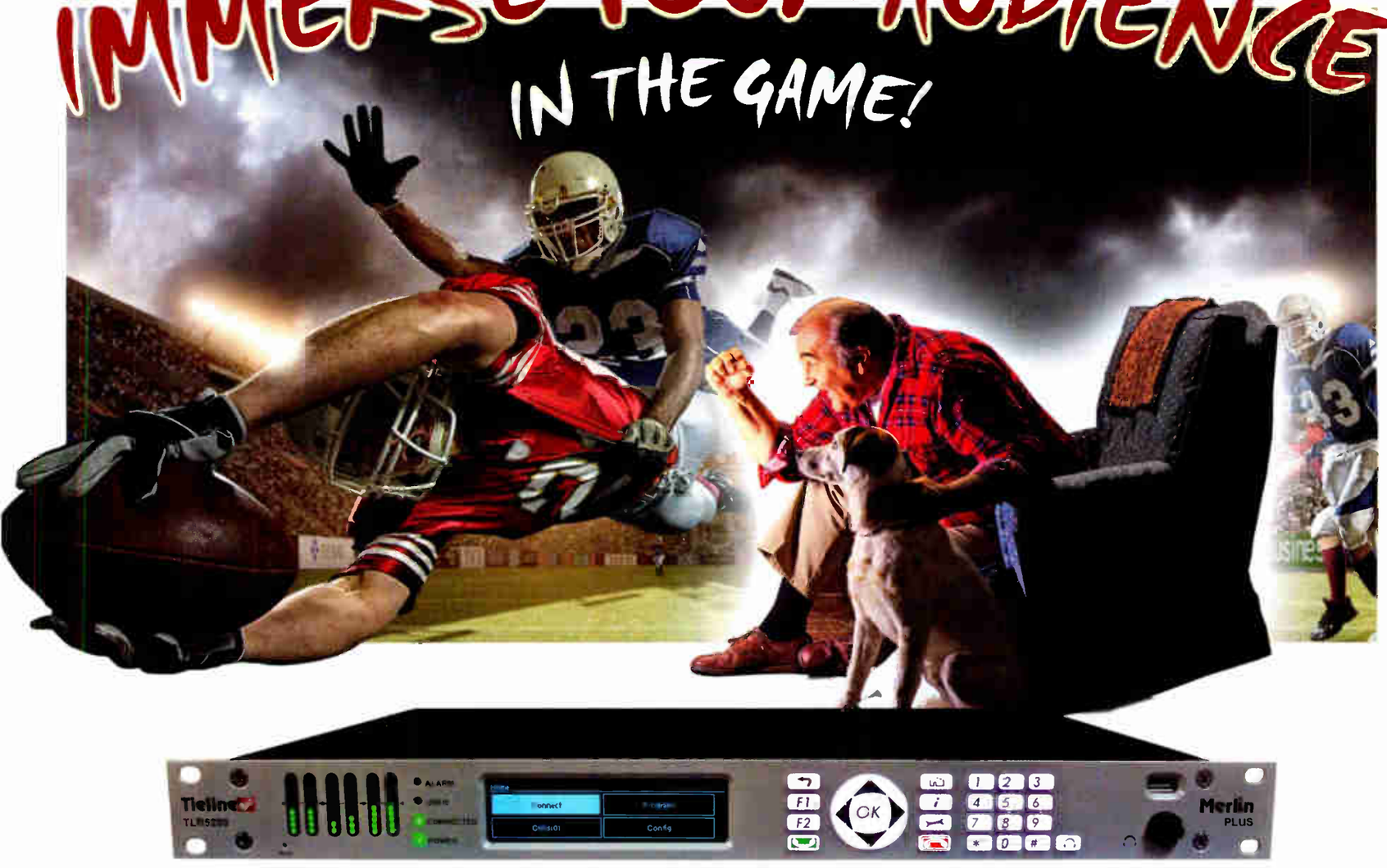

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ARTIST EXPERIENCE

(continued from page 10)

album art image for a song, to the station logo, and into the next song's album art image. GM's implementation of Artist Experience and station logo has been perfect under my observations in the past few weeks. Better yet, it puts a very nice graphical face to radio — and offers a comparable experience to when the system plays songs that have album art off your iPhone or iPod.

COLLECTIVE EXPERIENCE

Perhaps most concerning is that as of my last check in mid-June 2013, only seven stations in the Los Angeles area were transmitting Artist Experience via HD. Of these seven, six belong to my employer, Clear Channel.

You may have heard iBiquity and others indicating automotive receivers that support HD and Artist Experience are coming. Well, they are out there. GM offers the technology in select models now as standard, and the list of other OEM's out there with HD and Artist Experience in vehicles is growing rapidly.

Stations that do not have this technology implemented are at a disadvantage. Clear Channel Media + Entertainment and I have been a proponent in providing the industry with suggestive tips on how to implement this technology. At the NAB Show in April I presented on this topic, and I wrote an in-depth white paper on the implementation of this technology in the NAB Broadcast Engineering Proceedings, which are available from purchase from the trade organization.

I'm pleased to be partnering with the Society of Broadcast Engineers to provide an in-depth, live, interactive webinar on this topic on Thursday, Sept. 12 at 2 p.m. Eastern. Registration details are available at *sbe.org*. If you cannot attend the webinar live, it will be archived by SBE at the same site.

The presentation will focus on Artist Experience implementation via HD in three parts. First, I'll focus on what types of receivers are out there now that support this technology, including pictures of various units and address their implementations. The second part of the presentation will examine the technical details of how Artist Experience works. And finally, I will discuss implementation strategies of Artist Experience to help you relate the theory behind the technology into reality. This will draw on the experience that we have collectively learned at Clear Channel as we rapidly implemented Artist Experience via HD Radio nationwide in 2012.

Alan Jurison is a senior operations engineer for Clear Channel Media + Entertainment's Engineering and Systems Integration Group. He holds several SBE certifications including CSRE, CBNE, AMD and DRB. His opinions are not necessarily those of Clear Channel or Radio World.

NEWSROUNDUP

BIG DEALS: Cumulus Media will acquire syndicator Dial Global for $260 million. The broadcaster is financing the acquisition by selling 53 stations to Townsquare Media for $238 million. Cumulus CEO Lew Dickey says the deals give the broadcaster the necessary scale to program and distribute content on the levels its advertisers want on broadcast and digital platforms. A Cumulus-Dial combo would compete against Clear Channel's Premiere Networks and Walt Disney's ESPN Radio, among others. Dickey expects the transactions, subject to regulatory review, to close in November.

LPFM: Low-power advocacy group Let The Cities In wants the FCC to license stations at very low power levels, and it hopes the Department of Justice will help if necessary. LTCI believes licensing stations at 1 to 10 watts, or at least below 50 watts, may be the only way to fit more LPFMs in some major cities. The group has asked the FCC to reconsider its LP100-only approach; as of early September the FCC had not acted. LTCI continues to push the issue, and has asked that the DOJ intervene if the agency does not act. It would like to see a filing window for LP10s after the LP100 window that opens Oct. 15. LTCI's attorney is Don Schellhardt and its technology advisor is Nickolaus Leggett, both long-time LPFM proponents.

PIONEER HD: The Pioneer DEH-X5600HD in-dash CD receiver features an integrated HD Radio tuner, giving the listener the option of hearing AM/FM in analog or digital, as well as multicast channels and song title and artist information displayed. The model is one of eight Pioneer was shipping to retailers in August. All can accommodate various ways to tether a smartphone to the dash and access to Pandora Internet audio using a smartphone app. The list price begins at $90.

World Radio History

AFTER A DEMO, GMs FIND THE BUDGET FOR AN OMNIA.11

No obligation. 45 Day Demo.

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World Radio History

Clyburn, Morris Headline the Radio Show

Also on the docket: AM revitalization, FM in phones and dashboard trends

BY PAUL McLANE

Here's a roundup of notable sessions and programs at the Radio Show in Orlando, Fla.

The NAB Education Foundation, in partnership with the Broadcast Education Association, starts the show on Tuesday, Sept. 17, with its career networking event.

Record labels, artists and radio stations sometimes make uneasy bedfellows; on Wednesday in Orlando, **Carson Daly** of CBS Radio will moderate a panel called "Radio, Record Labels and Artists: Creating a Powerful Partnership," aiming to discuss how the three collectively can grow their businesses. Panelists are **Steve Bartels** of Island Def Jam Music Group, which represents stars like Rihanna and Kanye West; veteran programmer **John Dimick** of Lincoln Financial Media; and performing artist **Big Sean**.

An Advertiser Luncheon on Wednesday will feature a keynote from "one of radio's most important advertising clients," who had not been named at press time.

How to improve the lot of AM broadcasters? Numerous articles in RW and elsewhere have explored this. A Wednesday tech session on "Revitalizing AM Radio" will be moderated by **Ben Downs**, vice president/general manager of Bryan Broadcasting Corp., and feature **Mike Cooney**, vice president/chief technology officer of Beasley Broadcast; **Mark Denbo**, an attorney with Drinker Biddle & Reath; and **Glynn Walden**, senior vice president of engineering at CBS Radio.

Burowing further into that topic is the aptly named "Digging Deeper: Discussing AM Technical Improvements," featuring a discussion with **David Layer**, NAB's senior director of advanced engineering; **Steve Lockwood**, partner/senior engineer at Hatfield & Dawson; and **Ron Rackley**, a principal at du Treil, Lundin & Rackley.

Also on Wednesday, **Paul Brenner**, senior vice president and chief technology officer of Emmis Communications Corp., will tell attendees about the "State of the FM-Enabled Smartphone." Among other topics he will undoubtedly discuss is the recent news that Sprint has begun installing the NextRadio application in several smartphone models.

Wednesday tech sessions also include "Essential Planning for the Unexpected" and "Recovering From the Unexpected" (see page 16).

A selection of featured speakers, shown in approximate order of appearance in Orlando. Top: Carson Daly, Mignon Clyburn, Mary Quass. Middle: Jeff Warshaw, Gordon Borrell, 'Shotgun Tom' Kelly. Bottom: The Mavericks, Ajit Pai, Ginny Morris.

Acting FCC Chairwoman **Mignon Clyburn** will deliver the show keynote on Wednesday afternoon, following remarks by NAB President/CEO **Gordon Smith** and RAB President/CEO **Erica Farber**. Clyburn has served on the commission since 2009 and became acting chairwoman in May, the first woman to fill that role.

MAKING MONEY

Leadership will be a point of focus on Thursday, specifically at a Leadership Breakfast, "Opportunities in a Changing Economy," featuring several prominent, well, leaders. Participants include **Lew Dickey**, CEO of Cumulus Media; **Mary Quass**, CEO of NRG Media; **Jeff Warshaw**, CEO of Connoisseur Media; and **Larry Wilson**, CEO of Alpha Broadcasting and L&L Broadcasting. The panel will talk about expanding opportunities in radio for acquisitions and revenue in a growing economy; it will be moderated by **Lew Paper**, a partner with Pillsbury, and preceded by remarks from financial analyst **Marci Ryvicker** of Wells Fargo Securities.

Radio's place in the "connected car" has been the subject of a series of Radio World articles (see *radioworld.com/dashboard*), and the topic pops up in Orlando in a Thursday Super Session featuring presentations by **Fred Jacobs**, president of Jacobs Media/jacApps, and **Roger Lanctot**, associate director in the Global Automotive Practice of Strategy Analytics. Earlier this year, Lanctot told RW readers in a profile article that "the mobile advertising experience is in its earliest stages. What they're trying to enable is a location-based experience, [but] radio has always *been* a location-based experience." He urged broadcasters to take advantage of their ability to provide localized content.

IF YOU GO

What: Radio Show, Produced by NAB and RAB

Where: Rosen Shingle Creek Hotel, Orlando

When: Sept. 18–20

How: www.radioshowweb.com

How Much: Various packages; basic advance registration is $495 for NAB/RAB members, $795 for others

Also on Thursday, **Gordon Borrell** of Borrell Associates will lead a Super Session, "Radical Change in Local Advertising and How Media Is Morphing to Survive." He promises to explore new ways in which local businesses spend marketing dollars. Specifically, he riffs on recent big growth in money spent on promotions. Borrell sees this trend as an opportunity for radio, which knows how to use talent endorsements, live remotes and contests effectively.

The NAB Marconi Radio Awards dinner on Thursday will feature a performance by the recently reunited band **The Mavericks**, arranged through Big Machine Label Group in Nashville. Radio personality **"Shotgun Tom" Kelly** will host.

Up for the honor of Legendary Station of the Year are KFI(AM) and KIIS(FM) in Los Angeles, KYW(AM) in Philadelphia, WBBM(AM) in Chicago and WEEI(FM) in Boston. Competing for Network/Syndicated Personality of the Year are Argelia Atilano, Delilah, Steve Harvey, Tom Joyner and Petros & Money. For the full list, visit *radioworld.com*, keyword "finalists."

National Radio Systems Committee meetings also will be held Thursday. The AM & FM Analog Broadcasting Subcommittee, Radio Broadcast Data Standard Subcommittee and Digital Radio Broadcasting Subcommittee are all active and scheduled to meet then.

SAVING MONEY

Two technical presentations on Friday focus on "Efficiencies and Cost Savings."

Gary Liebisch, eastern region sales manager for Nautel Ltd., will talk about ways to cut AM transmitter power bills.

(continued on page 16)

World Radio History

MADE4FM

DSP PRECISION Modulation Monitors

ROCK SOLID • NO DRIFT • NO ALIGNMENT

M4FM
- Analog FM Modulation Monitor, Worldwide-capable, HD Radio READY
- Webserver Remote using any Browser, Email Alerts with Rear-panel Tallies

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DaySequerra

www.daysequerra.com

World Radio History

Sessions Focus on Crisis Planning

To survive and recover from emergencies, plan, plan and plan some more

RADIO SHOW ORLANDO

BY TOM OSENKOWSKY

Photo by Randy Le'Moine Photography. Used under a Creative Commons license.

Every company has established routines for conducting business efficiently. The model includes equipment, personnel and procedures. Routines can be disrupted by occurrences manmade and natural, unintentional and intentional, predictable and unpredictable.

Preparation for such events can minimize or prevent downtime. Most companies have several departments with supervisory personnel experienced in anticipating the types of disruptions and how to deal with them, should they arise. A comprehensive emergency plan is a key element in recovering from a catastrophic event. In many cases, experience is the best teacher.

The public relies on broadcasters to keep them informed during times of crisis. The Emergency Alert System may be used by officials to warn the public of imminent danger and how to best protect themselves.

Broadcasters must have a plan in place to ensure that their ability to serve the public is not impeded by disruptive events.

Dealing with the unexpected will be the theme of two Wednesday technology sessions at the Radio Show in Orlando.

THREE DAYS ALONE

Planning for the unexpected is not an oxymoron, but an essential. In business, one establishes a plan for normal operations and anticipates what can disrupt the norm and what steps can be taken to respond accordingly. Disruptions for radio can take many forms, such as storms, utility failures, personnel issues, STL loss, fire, accident, sabotage and flood.

The session, "Essential Planning for the Unexpected," will feature Roswell Clark, director of technical operations, Cox Media Group in Tampa/Orlando Radio, and Howard Price, director of business continuity and crisis management for ABC News. The moderator for both sessions is Bill Hendrich, vice president and marketing manager for Cox Radio in Jacksonville, Fla.

(continued on page 18)

HIGHLIGHTS

(continued from page 14)

Then **MaryAnn Seidler**, vice president of sales for Tieline Technology, will lead a panel on studio design using audio over IP. Speakers include Cumulus Media Senior Vice President of Engineering and IT **Gary Kline**, Greater Media-Boston Director of Technical Operations **Paul Shulins** and Wyoming Public Media Director of Engineering **Shane Toven**.

Two new conference tracks — the Programming Masters Series and Sales Consultants' Corner — run concurrently on Friday, and aim to give programmers and sales people "a comprehensive training opportunity in a consolidated format."

Broadcasters have developed something of a crush on FCC Commissioner **Ajit Pai** these days, thanks to his vocal advocacy for the AM band, so they'll be pleased to know that Pai will speak at the Radio Show Luncheon Friday, to "share his views on communications policy and how it affects free, local radio broadcasting," as well as discuss his involvement in AM issues.

The luncheon also will feature the presentation of the National Radio Award to Hubbard Radio Chair **Ginny Hubbard Morris**.

Morris manages the strategic direction of Hubbard's stations, which serve big markets: Chicago, Washington, Minneapolis/St. Paul, St. Louis and Cincinnati. Over the past two years, the company made notable acquisitions from Bonneville International and Sandusky Radio (the latter notably ending Sandusky's 36-year history in radio), thus bringing Hubbard's station count to 30, once pending deals are complete.

Morris joined the Hubbard family broadcasting business in 1982 and worked her way up; she also is a former chair of the NAB Radio Board. She joins a list of National Radio Award recipients that includes Dan Mason, Charles Warfield, Ed Christian, Jerry Lee, Lowry Mays, Jeff Smulyan and Erica Farber.

A few other session titles that caught our eye throughout the agenda are: "The Mysteries of Compensation," "Are You Ready to Drive Revenue From Health Care," "Programming and Digital: Different Metrics, Same Goal," "Imaging for a PPM World," "Managing Controversy" and "Adventures in Copyrightland."

The full program can be found at *www.radioshowweb.com*.

World Radio History

SATELLITE SIGNAL LEVEL METER AND SAT IDENTIFIER

Our new "SAT-BUDDY" satellite signal level meter will measure 950 - 2150MHz L band signals. The unit powers the LNB, and provides digital signal measurement for carriers. The unit can

identify satellites by name, measure signal levels -70 to 10 dBm, plus display carrier-to-noise (C/N), signal quality, and Bit Error Rate. Confidently recognize the satellite a dish is aimed at, and peak the antenna to maximum performance.

SURGE SUPRESSOR FOR LIGHTNING NEAR SATELLITE ANTENNA

Place the "LNB-Zap-Stop" in the coaxial cable line that runs from the dish, to the satellite receiver. Think of it as an "insurance policy" to protect

expensive indoor equipment from lightning hits. Transient Suppressing Diode technology works to block high voltage surges. The lightning protection units can take multiple strikes, with no need for resetting or replacing.

COVERSAT AND HEATSAT MAKE YOUR DISH RELIABLE IN BAD WEATHER

The COVERsat will prevent most signal outages caused by snow and ice. It is wrapped over the front face of a dish, creating a steep and slippery surface to prevent the accumulation of ice & snow. The cover is made to exactly fit the customers specified dish type. The HEATsat satellite antenna

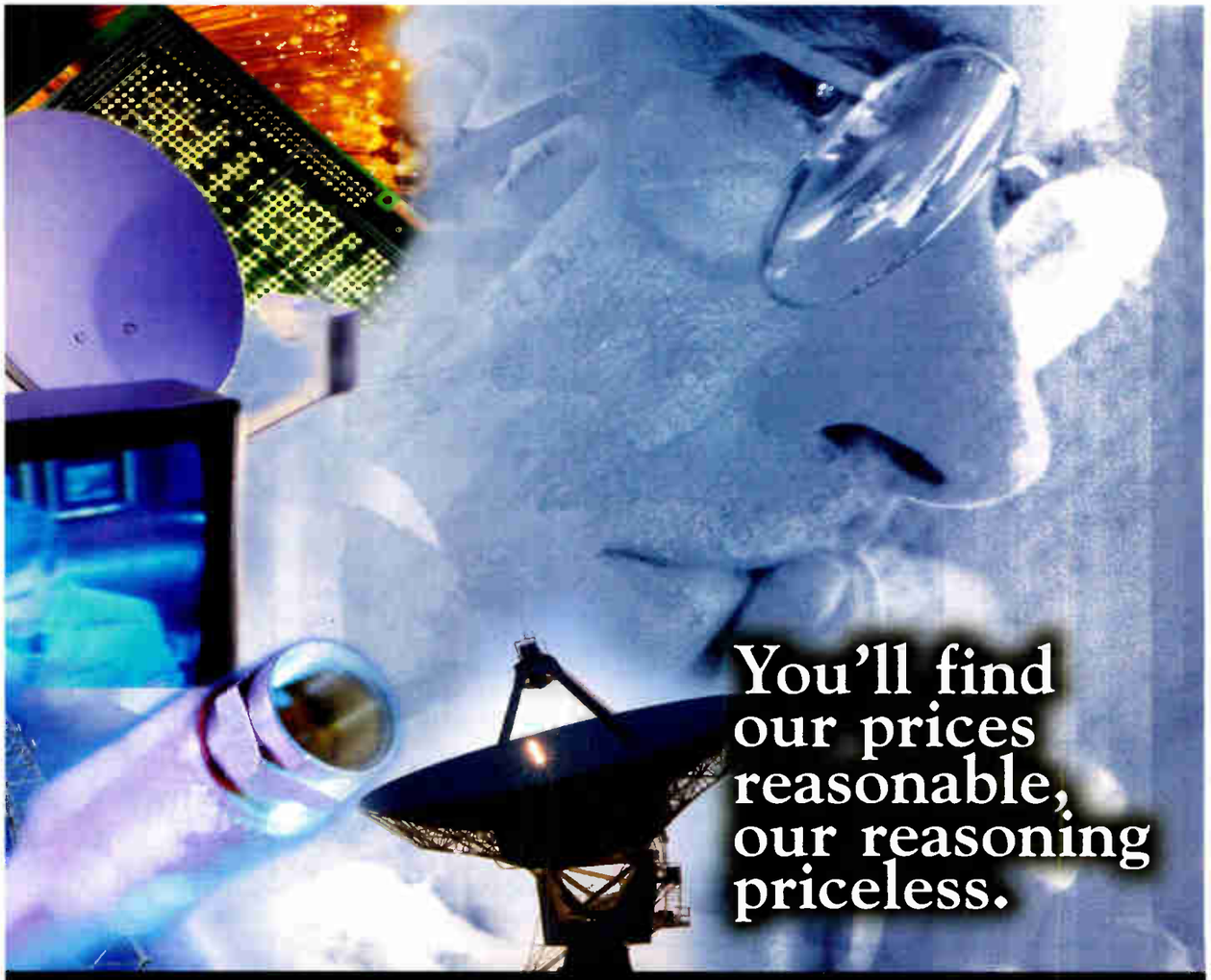
heater will completely stop signal outages caused by snow and ice. This reliable dish back-side electric heater keeps snow & ice from forming on the dish, by heating the reflector when snow and ice conditions are present. Purchase the HEATsat to upgrade existing satellite antennas, and ask for it to be included with your new dish purchases.

HD-GRADE SATELLITE LNB WILL BOOST EBNO ON RECEIVERS

Invest a FEW-HUNDRED-DOLLARS into upgrading your satellite antenna-mounted LNB, to the new DAWNco "L series" LNBs, and watch for improved EbNo readings on your digital satellite receivers. DAWNco's latest generation of C and Ku band LNBs have best-in-industry specs for "1dB gain compression." Install these units to make a real difference in the reception of HD and other MPEG4 or DVB-S2 satellite channels. Internal circuitry has been completely redesigned for reduced power draw, so that indoor receivers and power supplies will never be overtaxed. In order to prevent signal outages, when outdoor temperatures fluctuate, DAWNco's best LNBs feature a highly stable +/- 5 Khz rating.

IMPROVE RECEPTION WITH 3.7 METER SATELLITE DISH FOR LESS THAN $2K

Keep your dish cost under $2K, and permanently improve your satellite reception capability, with our fiberglass 3.7 meter satellite antenna. This is the perfect dish for rooftop or island locations, where the 8 petal design offers easy transport to site. Ground mount USA sites may prefer our HIGH-GAIN aluminum sat antennas, in sizes up to 5.0 meter. The customer will specify stationary or motorized configuration for the dish, and DAWNco offers all other items needed for a complete system.



You'll find our prices reasonable, our reasoning priceless.

Keeping track of all the satellite and fiber optic communications products out there is a full time job.

That's why so many people come to **DAWN**CO. They count on us for everything from satellite antennas, receivers, LNBs, and position controllers to fiber optic broadband links, satellite links and data links.

We offer the broadcast TV, cable TV, radio and educational fields high quality equipment at down-to-earth prices.

But more than equipment, we offer expertise. We can examine your situation and your budget, and recommend exactly what you need. You save both time and money by making the best possible buying decision.

Call a **DAWN**CO expert with your questions by simply dialing **800.866.6969**. Use the same number for our free catalog, or find it all on the web at www.**DAWN**CO.com.

DAWNCO

Reasonable prices, priceless reasoning.

World Radio History

Three Takes on the Radio Business

The view from managers in Alaska, Alabama and the Delmarva Peninsula

With the Radio Show coming up this month, Radio World invited station managers from a variety of business settings and markets to comment on the issues of most concern to them right now. Here are three.

DENNIS WEIDLER
General Manager
KICY(AM/FM)
Arctic Broadcasting Association Inc.
Nome, Alaska

As a radio manager, what's the biggest challenge facing you for the rest of this year and early 2014?

Though both KICY AM and FM are commercial, over 80 percent of our operating budget comes from donations, mostly from the Lower 48. I travel three or four times a year, cooking wild Alaska salmon in a series of fundraising dinners. Travel costs and logistics often present interesting challenges.

We are also staffed by volunteers. The Salmon Dinners are an important time for full-time volunteer and summer work team recruitment.

Dennis Weidler. 'The cost of music licensing is at the top of my concerns. I hope this quickly becomes a non-issue.'

What do we need to do to improve commercial radio's revenue performance?

Advertisers often need to be reminded that radio works. Then, we need to educate them how to make it work efficiently for them and to properly gauge results.

What are your sales people hearing on the street about radio?

We don't have a sales staff, per se. We do receive statewide orders from our representative in Anchorage. While the economy in Alaska was largely unaffected by the financial collapse of 2009, many advertisers are still reluctant to invest in their businesses as they did before.

Unfortunately, our traffic director enters orders I know can't work and won't work for the client. So many advertisers and agencies don't know how to make radio work like I know it can.

Locally, we are faced with huge energy costs with gasoline at $6.13 a gallon and heating oil just under $6. Even with those challenges, we are able to sell out our basketball and Iditarod coverage, as well as our Fishing Reports.

Has Pandora (and/or other new audio services) affected your business? How?

No. We have no 3G or 4G coverage in Bush Alaska, so devices are extremely limited to access audio content. We also have data caps, so streaming is limited. There is the promise of fiber optic cable coming to Bush Alaska, but we are still waiting.

Are there certain regulatory issues you are concerned about at the FCC, or changes you would like to see? What are they?

The cost of music licensing is at the top of my concerns. I hope this quickly becomes a non-issue.

Has your organization made any capital or facility improvements recently to improve your business, or have any planned? Briefly describe them.

We have upgraded our automation computers, as we were still using Windows 98 as the operating system. We have also taken delivery of new capacitors for our 50 kW transmitter. They are about five years beyond their life expectancy.

Has your station been approached by DigiMedia/Mission Abstract Data about automation licensing? What's your stance on that?

Not yet.

Who is the radio person you admire most?

He's now retired, but that would be Stephen C. Trivers of Kalamazoo, Mich., where I began my broadcast career over 40 years ago.

FRED HOLLAND
General Manager/Managing Member
WTKI(AM/FM) and WEKI(AM/FM)
Focus Radio Communications
Huntsville, Ala.

What's the biggest challenge facing you in coming months?

It's always more revenue. We are just approaching our fourth year in business after launching in an economic downturn. Fortunately for us, the numbers are moving in the right direction.

What do we need to do to improve commercial radio's revenue performance?

Remember the soul of our medium is still *local*. Customer and listener access at the local level is critical if we are to fend off the other platform choices. It's not rocket science.

What are sales people hearing on the street about radio?

Budgets are tight. We have to make a stronger case for staying the course. Good ideas still sell.

Has Pandora (and/or other new audio services) affected your business? How?

Not yet.

(continued on page 22)

World Radio History

SONY
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NEW VERSIONS
Now available

uniquely powerful, amazing together

The new Sound Forge™ Pro and SpectraLayers™ Pro upgrades represent the nexus of waveform and spectral editing. Reenergized recording and processing environments, more plug-ins, metering for the new critical standards, and fresh editing options give Sound Forge Pro 11 the edge on workflow efficiency, while SpectraLayers Pro 2 comes to the plate equipped with more speed, more convenience, and some astonishing new tools and methodologies for radical sound shaping. And that's only the beginning—this pair of heavy hitters is now wired for seamless audio data transfer, forming a colossal editing system offering immediate gains for professionals everywhere. Sound Forge Pro 11 and SpectraLayers Pro 2 are both available now, thoroughly improved and perfectly aligned to serve as your ideal gateway to the highest level of creative audio editing, including mixing, remixing, mastering, repair, restoration, and pure sound design.

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World Radio History

THREE TAKES

(continued from page 20)

Are there regulatory issues you are concerned about at the FCC, changes you would like to see?

I'd like to see more attention devoted to the future of AM. It's nice to have the translators. But the clock is running on the senior band's survival as more people who grew up with AM are leaving us.

Commissioner Pai has started something and I hope there's more momentum. Some technical requirements from 1933 should go. The problem can't wait for the typical bureaucratic cycle. I don't think there's time.

Besides, it's the one band nobody seems to be competing for. Technologies exist, so let's try some new things. Throw out a few old rules and release the beast.

Has your organization made capital or facility improvements recently?

Having a physical presence in each city we serve fits with staying local. We continue to look for new ways to be live and mobile with on site show broadcasts that actually sound good. We hope to have another live studio to geographically accommodate our newsmaker guests.

Has your station been approached by DigiMedia/Mission Abstract Data about automation licensing?

We have not. This is a legal decision that is beyond our control. I just pray any decision will not be an undue burden on our industry. It will hurt the little guys the most if it is not handled well.

Who is the radio person you admire most?

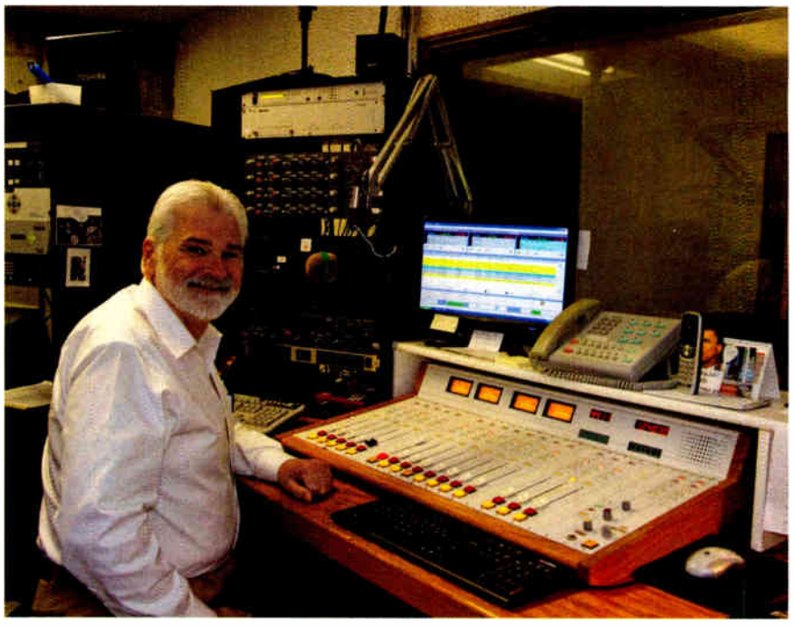
Must I pick one?

Bill Dunnavant, former owner of Athens Broadcasting in the Huntsville/Decatur market, and Jerry Rogers, one of the last remaining local operators in Savannah, had the knack for bringing talented people together and letting them grow. Examples of their marks on our industry are scattered throughout the country from national to local.

Anything else fellow radio managers should know?

Radio will survive if we remember why we are here. Our stations first and foremost are vital links for the public. We serve them by informing, entertaining and helping them decide where they want to spend their hard earned money.

And ... we get to make a living, too. Now, how cool is that!



Fred Holland. 'Technologies exist, so let's try some new things. Throw out a few old rules and release the beast.'

PETE BOOKER
President/CEO
Delmarva Broadcasting Co.
(with 13 stations)
Wilmington, Del.

What's the biggest challenge for the rest of this year and into 2014?

We are working hard in two areas: (1) We need to bring in more high-caliber professional business-to-business sellers — in the competitive multimedia landscape, top-notch pros who really understand consultative, relational client development. (2) We need to settle on a sustainable digital sales organization model.

What do we need to do to improve commercial radio's revenue performance?

The industry has talked about true consultative selling and value proposition for years, but when push comes to shove, you see way too many sellers and GSMs caving on rates because it's all about a revenue number, not a product value proposition. These people need to realize that they can make so much more, individually and as an organization, if they maintain a consistent devotion to maximizing the reasonable rates for everything we sell.

What are your people hearing on the street about radio?

Most clients on the local level still feel very good about radio and its value in bringing qualified prospective customers to their door. It is on us to continue to create great products that motivate response and get "butts in the seats." Even agency folks, on an increasing basis, are feeling better about radio than a few years ago. Everyone realizes digital is the future, but they also know that there are multiple years of value still left in radio.

Pete Booker. 'Most clients on the local level still feel very good about radio and its value in bringing qualified prospective customers to their door.'

Have Pandora or other new services affected your business?

Our total tune-in (cume) is as good as it ever was. We do see certain demos listening less at certain times of day, but we can't specifically tie it to Pandora. There are also some comments from time to time, but it seems as though it is shared listening, not that they are leaving us altogether. We believe that we will always have a combination of unique locally based and targeted products that the Pandoras of the world can never really match because they are going to build infrastructure in every market. That is what will carry local electronic media, digital and legacy.

Are there regulatory issues you are concerned about at the FCC, changes you would like to see?

As a company that also owns newspapers, we very much want to see the end of the antiquated and mis-focused newspaper crossownership rule. In this crowded age of thousands of media choices — local, regional and national, and rapidly declining print usage — there simply is no such thing as media concentration. Give us the chance to enhance the delivery of desired local media and we think we'll show the value. At some point, it's all going to be digital anyway, so let us build brands to get there.

Has your organization made capital or facility improvements to improve your business?

We are adding office and conference space to our Wilmington site and doing a full renovation including rebuilding five control rooms and adding a TV facility to leverage our new partnership with NBC10 TV in Philadelphia as the home of their Delaware Bureau.

We are also adding studio and office space in our central Delaware building as a result of the addition of Delaware 105.9, our successful news-talk station, on the air for about a year now. We have also put a new translator on the air for our 24/7 Spanish-language station with a new tower site, and we are building three other tower sites that are going to give us improved signals and for which we are acquiring lessees.

Has you been approached by DigiMedia/Mission Abstract Data about automation licensing?

Yes. Our position is that we don't own any automation software; we are leasing someone else's software with a valid license. Therefore, their claim shouldn't be directed to us.

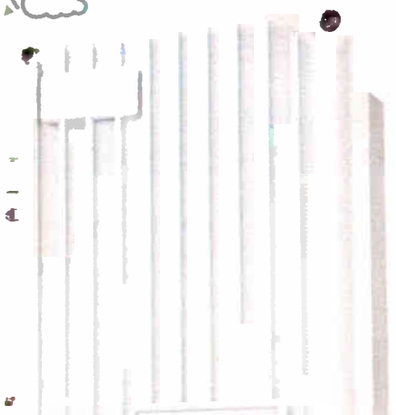
Who is the radio person you admire most?

I think there are many great people in our business. Many of them are not well known and toil in small markets.

World Radio History

HIGH CAPACITY
EVENT STUDIO TRANSMITTER LINKS

outdoor unit

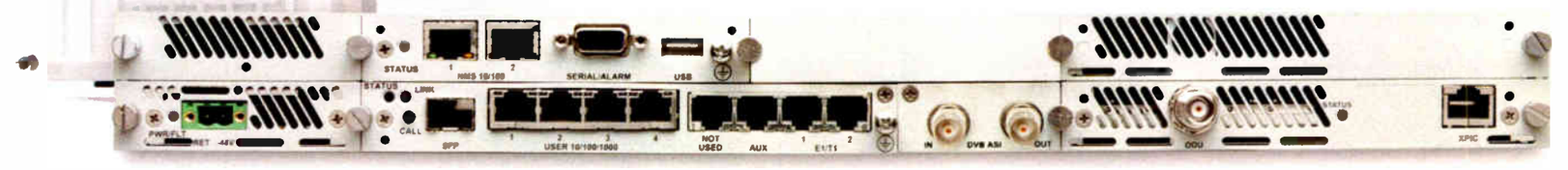


TAKE ADVANTAGE OF WIRELESS HIGH PAYLOAD STL/TSL CAPACITY

Moseley EVENT STL/TSL systems provide up to 155 Mpbs combined IP, T1/E1 payloads. Multi-station clusters can convey multiple linear uncompressed audio pairs for a truly cost-effective STL/TSL link. Connect your existing T1/IP audio hardware directly into the EVENT system, or use Moseley Rincon for your audio payloads. An optional DVB-ASI module is available for full duplex video.

EVENT systems are fully bi-directional including a Software Defined Indoor Unit (SDIDU) and Outdoor Unit (ODU), eliminating the need for costly waveguide hardware. The ODU is available in the license free 5.8 GHz band, or licensed 11, 18, or 23 GHz bands. Appropriate external antennas are selected based on path length.

indoor unit



INTELLIGENT SYSTEM DESIGN

Spectrum-scalable digital radios with user-selectable data rates enable broadcasters to have greater flexibility in STL planning and future growth. The integrated T1/E1 and Ethernet interfaces allow for a combination of T1/E1 and IP packet data.

IP APPLIANCES AND APPLICATIONS

Offer IP transmitter control, surveillance security, and site monitoring to reduce downtime, and protect valuable station assets while saving travel time to the site.

REMOTE MIRRORED SERVERS

From the transmitter site, offers backup of business records and programming content to get you back on the air quickly in the event of a studio outage.

EMAIL AND INTERNET ACCESS FROM THE TRANSMITTER SITE

Saves engineers time accessing manuals or technical support from manufacturers during maintenance sessions.

SIMPLE NETWORK MANAGEMENT PROTOCOL (SNMP)

Full SNMP package with GUI provides easy monitoring and configuration changes.

Contact The Moseley Sales Team to Custom Configure Your EVENT STL/TSL Today!

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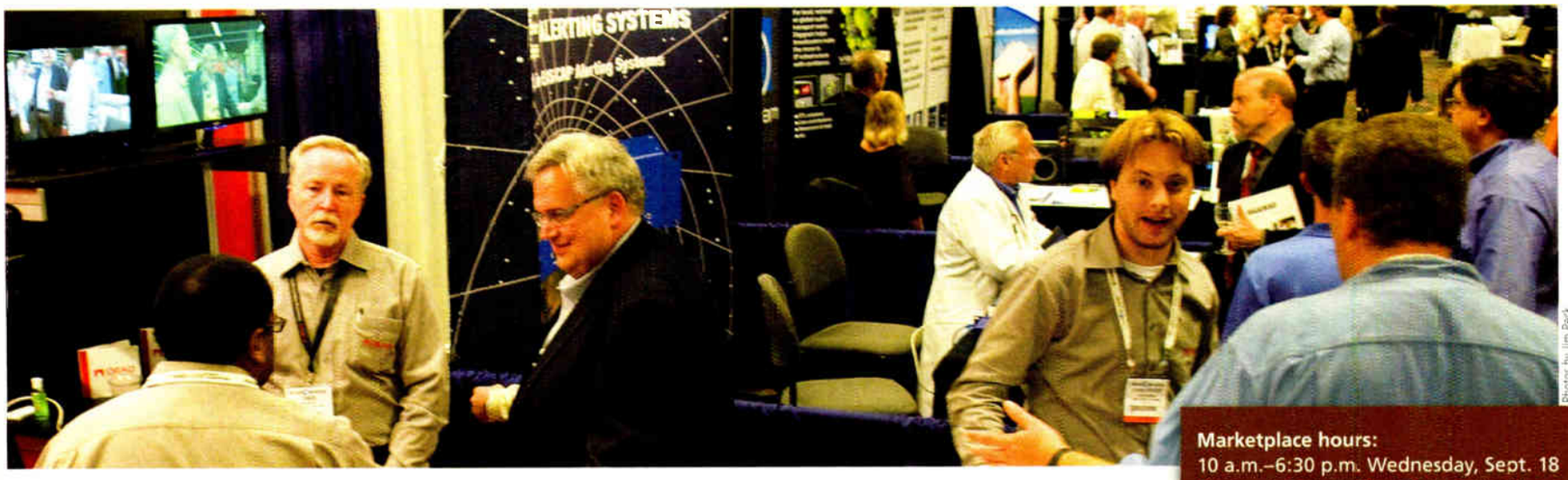
World Radio History



Photos by Jim Peck

Marketplace hours:
10 a.m.–6:30 p.m. Wednesday, Sept. 18
9 a.m.–4:30 p.m. Thursday, Sept. 19

The Marketplace

Exhibitor	Booth
305 Broadcast	210
AdMall/SalesTouch	1025
Advantage Systems Inc.	1027
AmWINS Program Underwriters	125
Arbitron	1018
Armstrong Transmitter	108
Atex	122
AXIS PRO	125
Bonneville Distribution	123
Broadcast Electronics/Marti Electronics/Commotion	302
Broadcast Software International	217
Broadcast Supply Worldwide	415
Broadcasters General Store	316
BST Exchange	118
CarPoint	312
Christian FM Media Group LLC	1014
Clear Channel Satellite	213
Coaxial Dynamics	423
Comrex	203
Continental Electronics Corporation	209
Dielectric LLC	424
Digital JukeBox	438
DoubleRadius Inc.	409
Elenos	208
Elettronika America Inc	413
EMIRAT AG	426
Emmis Communications	313
ENCO Systems, Inc.	1023
ERI-Electronics Research Inc.	309
Harris Broadcast	303
iBiquity Digital Corporation	223
International Demographics, Inc./The Media Audit	114
Kelly Music Research	127
Local Focus Radio LLC	1010
Mainstream Network	311
Marketron Broadcast Solutions	117
Matrix Solutions	410
Media Monitors	109
Millennial Media	411
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World Radio History

Humor Helps Talent on the Job

Also, we share feedback on our parabolic microphone project

WORKBENCH
by John Bisset
Read more Workbench articles online at radioworld.com

What do you do when you've installed talent control panels and are left with more buttons than you immediately need? You might cover them, remove them or black out the lens cap. But if you're Radio America engineer Al Peterson, you use it as an opportunity to put guests at ease with humor.

Al handles studio-recording duties at the Radio America Network in Arlington, Va. A former on-air personality himself, he understands performance anxieties, especially in people not used to being in front of a microphone.

When the network ordered plates with extra buttons intended for future functions, Al capped the unwired ones with legends having nothing to do with anything.

He tells us, "People not normally used to sitting in front of microphones can be intimidated by even the simplest of controls: On, Off, Cough, Volume, etc. So, imagine looking down at the buttons and seeing one labeled 'Free Beer.' It will distract you and loosen you up a little."

Fig. 1: Cover button caps with humorous labels to put your guests at ease and add a little fun to the studio.

Fig. 2: One of G. Gordon Liddy's favorites: the Death Ray.

Naturally, the button does not do anything, much less dispense beer (though he's seen people press it multiple times anyway, feigning disappointment). Neither does the button in Studio A that promises to fire off a Death Ray do as it claims. Al says, "When G. Gordon Liddy used to do his show from here, the button read 'Ejector Seat,' in keeping with his image as an agent of intrigue."

The complete control panel is shown in Fig. 3. Reach Al at *apeterson@radioamerica.org*.

Fig. 3: Alan's remote talent panels used at Radio America.

Roberta Barmore is with Indianapolis Channel 13, WTHR(TV).

With regard to the construction project in the July 17 issue in which we helped you convert a scrap satellite dish to a parabolic mic, Roberta commented that a piece of thick-wall rubber tubing, with 1/4-inch inside diameter, can be used to hold the microphone. Find such tubing at auto supply and hardware stores.

It turns out that this tubing will pass a 1/4-20 bolt. When the tubing is compressed by washers under the head of the bolt and a nut is affixed to the far end, the compressed rubber will grip the inside of a standard male-thread mic stand coupler. The rubber also offers some vibration isolation. This technique can be used on a long piece of 1/4-inch-20 all thread, bent to shape; or used to couple to a pipe.

> **It will distract** you and loosen you up a little.
>
> – Al Peterson

A neat alternative. Roberta Barmore can be reached at *rbarmore@wthr.com*.

With regard to that same project, Peter Wankerman reminds us of the importance of ensuring that the microphone is in the dish's focal zone. Hence the step, stressed by contributor Frank Hertel, that the mic be tightened down so the focal point aligns with the microphone pickup.

Some time ago Tim Sawyer, an engineering consultant with Mullaney Engineering, sent in a tip about how inexpensive spot infrared thermometers had gotten. These devices are ideal for identifying loose, heat-producing connections in AM antenna tuning units, phasors and electrical circuit breaker boxes. Taking periodic thermal measurements should help the engineer spot potential heat-related problems before they occur.

Tim reports that Fluke has developed an updated tool that combines the spot laser temperature measurement with a camera image of what you are measuring. A bit pricey at $895, but if it does the job and prevents catastrophes, it's worth the cost. For group stations or contract engineers, the outlay can be shared among stations.

The product is the Fluke VT02

(continued on page 30)

World Radio History

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september13INN.wheatstone.com

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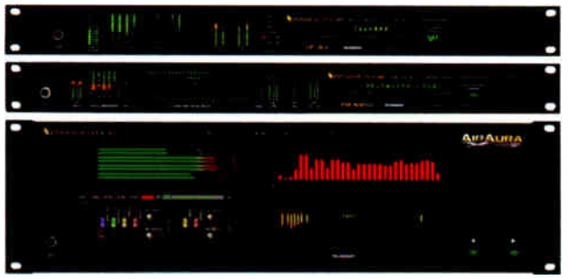

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Every year about this time we hear from the engineer or GM or PD or some other poor soul who happened to be the last one out of the station when the big storm/flood/earthquake hit. Maybe it was even you, the guy left alone with his thoughts and the WheatNet-IP (WNIP) system blinking up at you as if to ask, what's next? If you've done some emergency planning, there's probably not much to worry about. Even if you haven't, the WheatNet-IP audio over IP system is going to help you out, starting with silence detection and auto routing the main feed over to another BLADE that isn't connected to the switcher/power source/whatever that's taken the hit.

Get the whole story here: **september13INN.wheatstone.com**

Wheatstone and Tieline. More Magic.

It was bound to happen. Every time we get together with the guys from Tieline, we get carried away...

...last time it was the Genie, Tieline's distribution codec that we joined up with our WNIP for carrying long distance control of sources, devices and surfaces between remote studios. This time, it is Merlin PLUS, Tieline's new IP audio codec that now talks directly to the WheatNet-IP network through a WNIP card for managing up to six simultaneous remotes. The benefit: direct communication from the board op at the studio to remote reporters anywhere in the field.

Get the whole story here: **september13INN.wheatstone.com**

FM-531HD: Power To The People!

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Get the whole story here: **september13INN.wheatstone.com**

Tiny Tools For The Other Side of the Glass

We think miniaturization is just about the coolest thing. Our tiny talent panels take control surfaces to new diminutive dimensions.

The talent stations you've been waiting for. These networked control panels put talent mic controls, headphone volume and source selection, and much more at the talent's fingertips. No more having to wire together a talent station with mic, amp, headphone and speaker controls. It's all right here.

TS-22 This single panel controller plugs into the WheatNet-IP Intelligent Network to provide controls for mic, headphone, amplifier and speaker levels all in one turret. No outboard equipment required and no wiring it all together. It's all right here in one IP-accessed turret.

TS-4 The smaller TS-4 talent station provides lighted on/off/cough and talkback switches for a single talent microphone. A rotary headphone source selector is provided along with an OLED display for identifying the selected source. The source selector doubles as a volume control. The

Get the whole story here: **september13INN.wheatstone.com**

World Radio History

With Meters, Don't Agree to Disagree

How to keep up with changes in various meter standards

TECHTIPS

BY STEVE JOHNSTON

Some excellent articles have appeared lately on the history and use of audio level meters in radio, including Oliver Berliner's "VU Meter Legacy Shines On" in Radio World's May 8 issue. However, these articles have not addressed one important modern issue: We now have studios full of meters that do not respond in the same way on dynamic program material, and which do not follow the VU and PPM standards for responsiveness.

I would like to describe the situation and offers suggestions for getting along with this modern metering.

WHY DON'T THE METERS MATCH?

Once upon a time in our business, if you calibrated all the meters in a studio to agree on a steady tone, they would also agree on voice and music. Unfortunately, those days are gone. In the days of analog meters and recording media, a "vu meter" had a technical specification as to performance on a variety of audio, and you could count on vu meters all bouncing to the same levels on the same signals, resulting in a consistent level being observed from console to console and among recording and playback devices.

In other words, if you calibrated all the equipment with a standard tone, and everyone bounced the meters about the same, the results would be fairly consistent no matter what sort of programming was being produced. The same was true for facilities equipped with the less commonly used "PPM" (Peak Program Meter) standard.

But today, you can't trust that audio level meters are standardized. While they should ideally all respond to steady tone the same way, in reality, they can be wildly different on actual, dynamic program material. Some meters follow momentary peaks while others ignore them — and you will find all variations in speed of reaction between those extremes. This kind of variation leads to differing levels on production done on different equipment with different audio material.

Computer software "meters" are a big offender in this regard. The "bounce" of the onscreen "meters" is very different from real vu meters and can be misleading, especially on dry voices, resulting in different announcers getting different results, even when they think they are making the meters read the same.

In addition, the varying lag time involved in the calculation and display of the meter bar graphs in computerized systems can play a big role as humans use the display for real-time work.

WHAT TO DO?

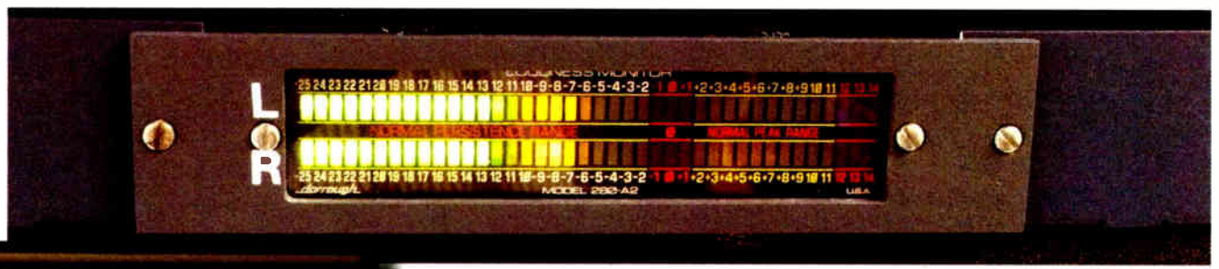
Here at Wisconsin Public Radio, we always calibrate to a standard tone, but I recommend to our staff that they also look at the overall waveform display when finished with a recording, in order to learn how to judge the levels on real program material. I like to see a waveform that occupies roughly two thirds of the available space. That generally results in a good level.

Audio level meters should adhere to the official VU standard for response to signals — but don't always, even if they are marked 'VU' on the face.

And you don't want many, if any, instances when the top and bottom of the waveform limits are reached. Those are peaks, which are getting hard-clipped because you are out of headroom. With experience, you can learn what meter bounce on your equipment produces a given waveform appearance, as well as corresponding loudness on playback for the typical sort of audio you are recording.

When using import software to directly transfer files into computerized storage/playback systems, it is important to do some followup checks to see how loud or soft the audio is once it gets into the system. Since people can change the way audio is displayed on their production software (Sound Forge, Adobe Audition, Audacity, ProTools, etc.) and the digital "meters" on that software vary in performance, there is no reliable standard between production software and automation systems for file transfers.

Have a look at the waveform in your automation after import and note how it compares to the waveform in your production software. If needed, adjust your levels using the building in normalization features of the editing software, resave the file, use the import process again and have another look. After some quality control comparisons of this sort, you'll soon learn what loudness you need on your production system to get a successful file transfer.



An example of a digital meter that was designed to display both VU standard response and peak tracking.

Remember: In digital recording, what sets the level is how the file ends up on the recording media, which these days is usually the hard drive in the device that will be used for playback on the air. Level indicators and waveforms on recording and editing devices earlier in the production process, while important for keeping audio clean and free of clipping on their own device, do not directly control the level and loudness at which your program material ends up playing back on the air.

Naturally some variation will always be present. Air studio operators are expected to use their faders, and we should always have audio processing on the outgoing audio lines, which will compensate to some degree for varying levels. But always bear in mind how modern audio level meters may bounce in differing ways.

LET'S RECAP

Getting a handle on the wildly varying audio metering is not easy. Orban has produced a free software package known as the "Orban Loudness Meter" (*www.orban.com/meter*), which accepts two-channel stereo inputs and displays instantaneous peaks, VU, PPM, CBS Technology Center loudness, ITU BS.1770-2, EBU R 128 loudness, and Reconstructed 8x Over-Sampled Peaks. The comparison of the various meters shown in the Orban program as you work with audio in your studio software and hardware can be very educational. It will help you understand the issue we face.

I have hopes that the recent interest in metering of the human perception of "loudness" and projects such as the ITU BS.1770-2 standard (see *radioworld.com/links* to read it) will stimulate enough interest in the subject that equipment manufacturers will embrace a new standard and we can begin to trust the meters again.

Steve Johnston is the director of engineering and operations at Wisconsin Public Radio. He can be reached at johnston@wpr.org.

WORKBENCH

(continued from page 26)

Visual IR Thermometer. Find links to information at *radioworld.com/links*.

The VT02 takes thousands of measurements per second and overlays the measurements with a camera image of what you are measuring. The point-and-shoot, focus-free design makes operation simple, and there's no more guessing of what you are seeing. Also included is Smartview software, which records images on a micro SD card. The images can then be downloaded into reports. Contract engineers can now show their clients what's wrong, and how the problem was resolved with before and after photos.

It's budget time, so consider the insurance that the Fluke VT02 can provide.

Reach Tim Sawyer at *tzsawyer@mullengr.com*.

Contribute to Workbench. You'll help your fellow engineers and qualify for SBE recertification credit. Send Workbench tips to johnpbisset@gmail.com. *Fax to (603) 472-4944.*

Author John Bisset has spent 44 years in the broadcasting industry and is still learning. He handles West Coast sales for the Telos Alliance. He is SBE certified and is a past recipient of the SBE's Educator of the Year Award.

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Receivers for Every Taste and Whim

What are people listening to radio on? We dig up five more cool products

BY JAMES CARELESS

Reader response to our recent article about interesting new radio models ("Radio Designers Step Up Their Game," Apr. 24) motivated us to seek out more innovative receivers. And, boy, did we find some!

RETROSOUND RADIOS: MODERN RETRO RECEIVERS FOR VINTAGE CARS

Do you own a vintage automobile — or just a reliable old junker — and find yourself in need of a replacement radio? RetroSound Radios may be able to help. They sell modern car radios in retro styles for many makes and models of cars, including the classic 1957 Chevy. RetroSound radios look and sound like the originals they replace, with the exception of their discreet monochrome LCD displays and mini-plug input jacks (optional) for feeds from smartphones, tablets and iPod/MP3 players.

RetroSound radios are also the same form factor as the old units, making swap-outs easy. Prices vary; learn much more at *retrosoundUSA.com*.

MIDLAND XT511 EMERGENCY CRANK BASE RADIO: READY FOR ANYTHING

Emergency radios equipped with hand-crank generators are a great way to ensure that you always have a working receiver, especially if the main AC power is down, the alkaline batteries dead and the sun is behind a cloud.

The Midland XT511 Emergency Crank Base Radio has this very functionality for receiving AM/FM broadcasts whatever happens, but it also is able to receive NOAA Weather Alerts and play them whenever they occur.

The XT511 is also equipped with a built-in GMRS two-way transmitting radio (plus handheld microphone), the FCC-licensed radio band with up to a 20-mile range in ideal conditions. This unit includes a USB connector for charging cellphones, a flashlight and a clock radio with Snooze. With this unit, found for $89.99 at *midlandusa.com*, you will be ready for anything.

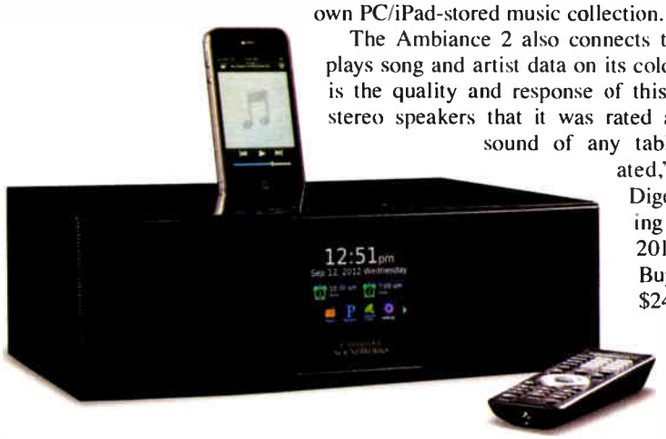
SANGEAN H202 RADIO: NOW THERE'S BLUETOOTH IN THE SHOWER

The Bluetooth standard is named for King Harald of Denmark, a 10th century ruler who so loved blueberries that his teeth were reputedly stained blue. Hence it makes sense for a Bluetooth-enabled radio to be found in the bathroom.

Sangean's H202 shower radio comes with Bluetooth connectivity, allowing the user to access music on Bluetooth-enabled computers, MP3 players or smartphones. The H202's white plastic shell is waterproof and has a water-resistance 2 watt speaker. It boasts 10 station presets (five each for FM and AM), an Emergency LED flashlight and buzzer (should you get in trouble in the bathroom), large LCD display/clock and alarm system, and an easy-to-hang bracket and hanger. Price: $109.95 at *www.universal-radio.com*.

CAMBRIDGE SOUNDWORKS AMBIANCE 2: THE DO-IT-ALL, FULL STEREO TABLETOP

Back in the 20th century, a tabletop radio was just that — a tabletop unit that only received AM/FM radio, with relatively decent sound offered by the better models. Cambridge SoundWorks' Ambiance 2 Music System is the 21st century tabletop. It is a sleek black stereo unit that not only receives radio but serves as an iPhone dock/charger/music access port, and Web radio via the Ambiance 2's built-in Wi-Fi connection — which also connects to the user's own PC/iPad-stored music collection.



The Ambiance 2 also connects to Pandora, and displays song and artist data on its color touchscreen. Such is the quality and response of this system's full-range stereo speakers that it was rated as having "the best sound of any table radio we evaluated," said Consumers Digest in February, giving the Ambiance 2 its 2013 Premium Best Buy Award. It sells for $249.99 at *store.cambridgesoundworks.com*.

ETON G2 REPORTER: ULTRA-SMALL AM/FM/SW RADIO WITH BUILT-IN RECORDER

Once upon a time, shortwave radios were gigantic, tube-filled monsters, and those few that claimed to be "portable" were only designed for weight-lifters. Today, things have changed: Etón Corp.'s Grundig G2 Reporter is a fully functional AM/FM/SW (shortwave, aka world band) receiver with direct access via telephone-style buttons. It also has stereo speakers, a built-in microphone and an included recorder that captures broadcast or voice audio to a removable Micro-SD card. (You can also dub MP3/WMA audio files to the card via a computer, then put the card into the G2 for playback.)

The Grundig G2 Recorder has 248 memory presets, RDS, full clock radio functions and input ports for LINE-IN and an external microphone. Yet it weighs 9.6 ounces, and measures just 7.5 by 3.5 by 0.8 inches in size. Price: $149.99 at *shopetoncorp.com* (sites like Amazon may sell for less).

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WHO'SBUYINGWHAT

NAUTEL STARTS DELIVERY ON INDIA DRM PROJECT

Transmission manufacturer Nautel has started delivery on a large notable project in India. The manufacturer says that the project "represents a major change in the number of potential listeners for DRM, and reinvigorates medium-wave transmission."

The project, announced previously, is part of All India Radio's transition to DRM digital AM; it involves 4.9 Megawatts total of transmission power, according to the company. Nautel said it began deployment of 27 medium-wave AM transmitters and associated equipment ordered by India's Prasar Bharati.

"The orders for 100 kW, 200 kW and 300 kW DRM-enabled transmitters are being installed for All India Radio and comprise the world's largest digital radio deployment to date," it stated. "All transmitters in the system are being configured for DRM30 transmission and will be used in 27 locations throughout India."

Engineers from AIR were at the Nautel factory in Hackett's Cove, Nova Scotia this month to begin Factory Acceptance Testing (FAT) of the first transmitters in the order. Shown in the accompanying photo are engineers from AIR and ComCon at Nautel; from left, Steve Farley (Nautel), Rajiv Kapoor (AIR), Tim Hardy (Nautel), Vijay Baleja (AIR), Peter Conlon (Nautel), Rakesh Aggarwal (Comcon), Chuck Kelly (Nautel) and Trinian Ayangoswami (ComCon).

All India Radio (AIR) serves the country via analog broadcasting service, with various languages and dialects. "The transition to digital broadcasting will allow AIR to use alternate platforms such as podcasting, SMS, webcasting and mobile services, and offer a 24-hour news channel along with other programming. Additional services such as Interactive Text Transmission and disaster warning are also planned," Nautel stated.

Nautel CEO Peter Conlon said the project "represents a major change in the number of potential listeners for DRM, and reinvigorates medium-wave transmission which has been languishing over recent years. This deployment shows that radio is still a valid medium that has a place in our mixed media world for decades to come."

PEOPLENEWS

Anders Ohlsson has been named **WideOrbit's** technical product manager for WO Traffic for Radio.

Matt Leland is the new director of sales for **Burk Technology**.

Ray Miklius has joined **Harris Broadcast** as director of product line management for television transmission. The company has also added **Steve Foreman** as president of global operations and services, and **Jeff Liening** will be the new senior vice president of global sales operations.

Journal Broadcast Group has added **Ron Harris** to its Boise, Idaho, operations as the new operation manager for its radio division. Harris will oversee KTHI(FM), KRVB(FM), KQXR(FM) and KJOT(FM). **Tom Langmyer** has also been named vice president, news/talk programming for Journal Broadcast Group.

Stacey Sedbrook

Beasley Broadcast Group has tapped **Stacey Sedbrook** as its new vice president of digital.

CBS Radio has promoted **Chris Oliviero** to executive vice president of programming. He has served as senior vice president of programming for the past four years. **Daniel Kearney** has been named senior vice president and market manager, **CBS Radio Los Angeles**.

Matt Leland

Tom Langmeyer

Crawford Broadcasting Co. has announced that **Aaron McEachern** is the new chief engineer of CBC–Detroit, effective Aug. 15. He replaces Joe Huk, who left to work for General Motors.

Dial Global announced that **Ronald Furman** will join the company as chief revenue officer. He will be based in New York City and will report to CEO Paul Caine.

The **National Association of Black Journalists** elected current Vice President of Broadcast **Bob Butler** to serve the next term as the organization's 20th president.

John D. Root has been named **TSL Products'** vice president of sales for the Americas.

RadioBDC Program Director **Paul Driscoll** has been named director of operations & program development of RadioBDC.

Luis Diaz-Albertini has joined **Stardome Radio Networks** as its chief revenue officer.

NAB recently announced some personnel changes. Deputy General Counsel **Valerie Schulte** has retired. **Ann Marie Cumming** has been named senior vice president of communications, and **Shermaze Ingram** has also had "senior" added to her title; Ingram is now senior vice president of marketing and creative services.

Valerie Schulte

John Batliner has the added responsibility of serving as the U.S. AKG sales leader for **Harman**.

Entercom has promoted eight employees to the title of vice president. The new vice presidents of sales are **Pat Galloway**, New Orleans; **Mike Johnson**, Rochester; **Joby Koren**, Denver; **Roxanne Marati**, Denver; **Lisa Powell**, Greensboro, N.C.; and **Kristen Kelleher-Wong**, Sacramento, Calif. **Brian Kelly** of Milwaukee and **Brian Douglas** of Greensboro were named vice presidents of operations in their respective markets. **Entercom Boston** has also hired **Kevin Graham** to lead WEEI as their new brand manager.

Don Bird

Lawo North America Corp., the U.S.-based arm of German broadcast equipment maker Lawo, has announced that **Don Bird** is vice president of business development and marketing, and **Damian Fink** will now serve as product support manager.

RTW has named **Martin Leunberger** as its new head of sales.

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World Radio History

Worldwide, DXpeditions Hunt Elusive Radio Signals

BY JAMES CARELESS

MONTEVIDEO, URUGUAY — Uruguay's Horacio Nigro is an amateur radio operator (call sign CX3BZ), an international shortwave radio listener/blogger (*lagalenadelsur.wordpress.com*), and an avid fan of "DXpeditions."

Whether taken alone or accompanied by other radio enthusiasts, DXpeditions are journeys to sparsely populated, low-interference zones — requiring supplies such as high-end radio equipment and long wire antennas.

As for the expression "DXpedition," DX is an old Morse Code term for the word "distance," and a "DXer" is the radio hobbyist who seeks distant radio signals.

"I started my own saga of personal DXpeditions going to Valizas, a seaside village in the Atlantic coast of Uruguay, with a Kenwood R600 communications receiver and my first Beverage antenna," said Nigro. A Beverage antenna is a very large and sensitive horizontal wire antenna, requiring hundreds of feet of linear space for optimal deployment.

REMOTE SIGNALS

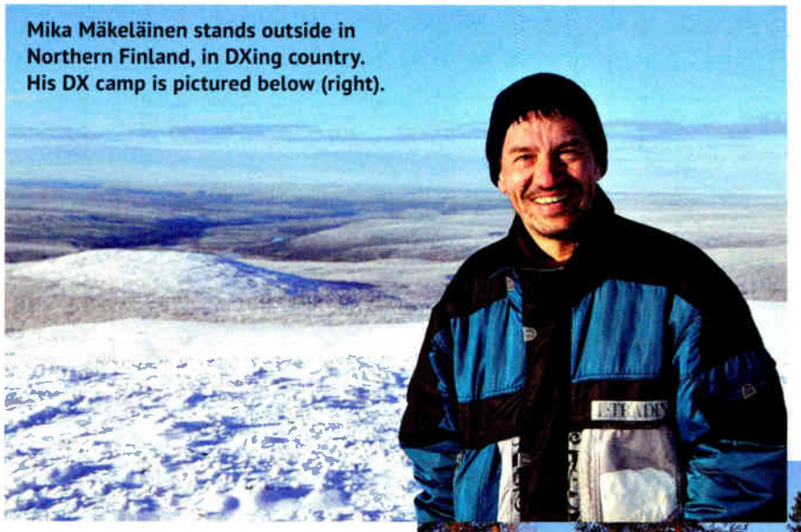
"It was essential to catch the first medium-wave stations across the Atlantic and also the Middle East." Nigro was also able to receive distant faint FM signals from Puerto Rico, Chile and Venezuela carried far beyond their normal line-of-sight range by rare conditions in the ionosphere overhead. "Collectively, these are unforgettable moments of my career as a DXer," he said.

Finnish journalist Mika Mäkeläinen is another DXpeditioner/radio enthusiast, who is best known for his authoritative radio listening site *www.DXing.info*. "I've been a DXer since the late 1970s, when shortwave radio to me was a window to the world," he said.

With the advent of satellite TV and the Internet, shortwave radio's status as the average person's only source of international broadcasts was supplanted; motivating Mäkeläinen to start chasing remote radio signals to keep his DXing passion stoked and satisfied.

"Depending on how you count, I have collected verifications from about 4,400 AM and shortwave broadcast stations from around the world, almost 90 percent of which are from outside Europe," he said. "Every winter I spend a week or two up in Lapland, northern Finland — above the Arctic Circle — on DXpeditions, which to me are the annual highlights of the hobby."

Prithwiraj Purkayastha of Assam, India, is also a dedicated DXer; so much so that he has gone from merely listening to producing/hosting "Indian DX Report" on worldwide shortwave service Adventist World Radio and KBS World Radio, a shortwave station broadcasting from South Korea.



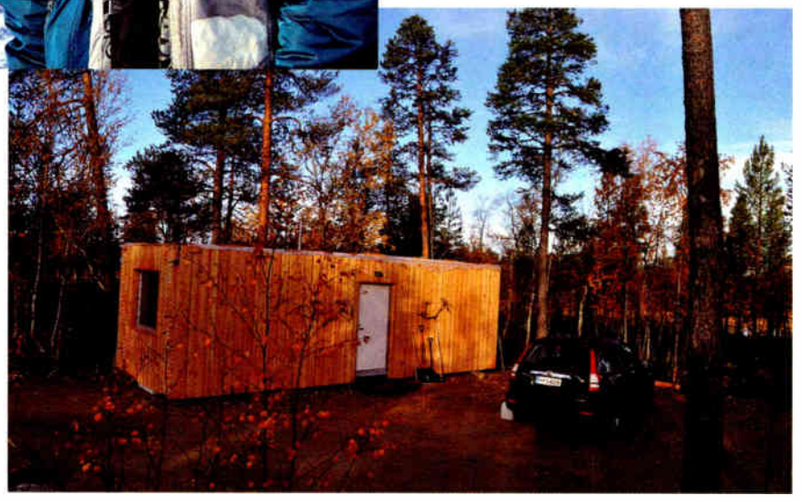
Mika Mäkeläinen stands outside in Northern Finland, in DXing country. His DX camp is pictured below (right).

In January 2012, Purkayastha travelled some 600 miles from Assam for a DXpedition in Mandarmoni — on the southern tip of India's West Bengal coastline — along with fellow members of the Indian DX Club International in January 2012.

NECESSARY GEAR

"We not only heard stations from Brazil, but heard signals from international radio stations from Laos, Indonesia, UAE, the United States, Peru, Madagascar, Oman, Bahrain, Botswana, Armenia, Mali, Israel, Sudan, Zambia, Tunisia, Ethiopia, Rwanda, Germany, and Romania," he said. Purkayastha has posted a report about this DXpedition at *www.idxci.in/mandarmani-dxpedition-3*.

Like service clubs and team sports, DXpeditions can be a good excuse to get away for a weekend. But unlike clubs and sports, DXpeditions give radio hobbyists a chance to "bag the big ones" — the signals they can't receive at home due to interfering signals and electrical power noise, and the lack of space to set up long, long wire antennas. And being able to spend a few dedicated days listening to distant signals allows them to take advantage of occasional changes in the ionosphere that enhance signal propagation.



To make their catches, DXpeditioners take radios, antenna tuners, and lots of antenna wire with them when they hit the road. The radios can range from the most sophisticated direct-entry push button digital radios to old tube sets with big dials, hot tubes and a heftiness that makes them anything but portable.

Cheap-and-cheerful radios are also welcome, since a DXpedition is a great time to test the radios' actual performance compared to others'. More than one DXer has been surprised to learn that their cheaper set does, in some cases, perform better than a premium-priced receiver.

Food, beverages (often of the alcoholic variety) and bedding are also musts, as is protective clothing. This is because the best DXing sites are often the most forbidding, such as Mäkeläinen's DX collective's Lapland camp (with a heated two-room cabin) above the Arctic Circle.

"It has about a dozen kilometers of highly directional Beverage antennas and loads of technical stuff, even laptop computers starting next season, so we've really tried to make it as easy as possible for anyone to enjoy this aspect of the hobby," he said. "International visitors are welcome as well. We've already had one, and expect a few more this coming season." Details can be found at *www.dxing.info/dxpeditions/aihkiniemi_dx_cabin_for_rent.dx*.

Left: DXers Alfredo Locatelli and Horacio Nigro (right) on a DXpedition in Uruguay in the 1980s.

Below: A recent picture of Horacio Nigros in Valizas, Uruguay.

THE CATCHES

Actually, most DX sites are temporary camps, requiring tents and other living supplies to be brought in. Smart DXers are known to favor seaside beaches in warmer climates — the ocean being a good path for long distance signals — where swimming and sun tanning are options as well as radio listening.

Catching rare signals isn't enough — true DXers send proof of their reception successes to the stations they picked up, to get written confirmations back. Such a confirmation report, traditionally a post card, is known as a "QSL."

In the past, written reports detail-

World Radio History

Below: An outdoor antenna strung up during the 2012 Mandarmani, India DXpedition.

Right: Mandarmani DXpeditioners tuning into the world.

Actually, most DX sites are temporary camps, requiring tents and other living supplies to be brought in.

ing what was heard and station IDs were considered to be a must, along with details of how well the signal was received. Today, "if you record the station ID and send it to the station, it is sufficient proof of picking up the signal, even if you're only able to hear the signal for 20–30 seconds," said Mäkeläinen.

So what kind of DX catches have these DXpeditioners achieved? In Finland, "catching WCNB from Connersville, Ind., on 1580 AM with 4.6 watts of power — confirmed by the chief engineer of the station, who himself is a DXer — was a very nice surprise back in 1995," said Mäkeläinen.

"Another memorable one was hearing Tonga on 1017 kHz in 1998, after which Scandinavian DXers seriously started to hunt for even the smallest Pacific islands. Some other stations are memorable because of their verifications, such as Bolivian shortwave station Radio Eco, which long ago sent me a small stuffed alligator!"

"I have received a reply from 'Volcano Radio' in Ascension Island, replying to my listening report and heard while a local station was silent for maintenance for some hours," said Nigro. "I also have in my collection QSL cards that came as a reply from Radio Valladolid in Spain, Radio Monte Carlo and Switzerland."

Today, in the Internet Age, DXpeditions remain alluring to radio enthusiasts for the same reason that "trying to catch the big one" is an ongoing motivation for fishing fans.

"Even after dozens of DXpeditions, I still encounter something interesting every time I go up to Lapland," said Mäkeläinen. "For instance, last season we found a bunch of AM stations from East African countries that had never before been heard in Europe!"

James Careless is a regular contributor to Radio World, and a DXer. He lives in Ottawa, Ontario. His most prized catch is All India Radio, which he captured at a Canadian campsite using a $40 Sangean shortwave receiver and one-meter of wire connected to an aluminum tent pole.

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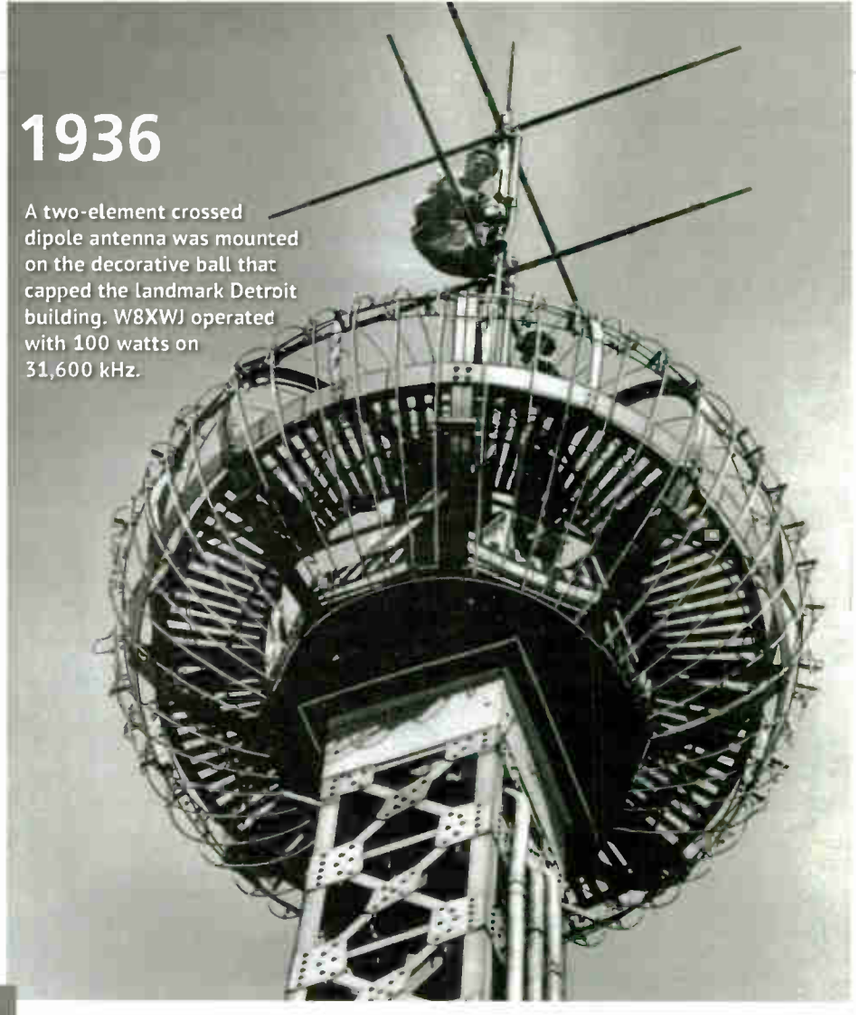
World Radio History

A Detroit Apex Station in 1936

BY JOHN SCHNEIDER



A two-element crossed dipole antenna was mounted on the decorative ball that capped the landmark Detroit building. W8XWJ operated with 100 watts on 31,600 kHz.

As early as 1932, the public was becoming dissatisfied with the sound quality of AM broadcasting. They complained about low fidelity, heterodynes and squeals. AC hum on some stations and the ever-present static. The Federal Radio Commission (soon to become the FCC) started investigating the possibility of "high-fidelity" radio.

Their first step was to expand the upper end of the AM band in 1932, setting aside three frequencies for experimental wideband "high-fidelity" stations – 1530, 1550 and 1570 kHz. (One such station, W2XR in New York City, evolved into today's WQXR-FM.) Their second move was to permit experimental high-fidelity broadcasting on the upper shortwave frequencies.

FCC Assistant Chief Engineer Andrew D. Ring called them "Apex" stations. He said "these ultra high frequency stations must be located upon a high point, since their signals simulate light and must 'rain down' for good reception." Because they weren't limited to the AM band's 10 kHz channel bandwidth, the new Apex stations could transmit wideband high-fidelity AM.

Dozens of existing AM broadcasters quickly applied for Apex licenses so they could simulcast their programs in high fidelity and stake out their claim for this new broadcast band. The first Apex station was W8XH in Buffalo, started by WBEN in 1934, and by the end of 1938 there were more than 50 Apex stations. Among these was W8XWJ operated by the Detroit News station WWJ, seen in these photos.

W8XWJ began broadcasting on Jan. 29, 1936, on a frequency of 31,600 kHz. The studio and antenna were on the top floor of the Penobscot Building, one of Detroit's tallest buildings. A two-element turnstile crossed dipole antenna was mounted on the decorative ball atop the building's peaked roof. W8XWJ mostly simulcast the regular WWJ programs.

In the photo below, WWJ Chief Engineer C.H. Wesser is seated at the station's speech input panel. The RCA 100-F ultra-shortwave transmitter is at left. Also visible is an RCA transcription turntable and an RCA 50A inductor microphone. The transmitters specified an operating range of 30–41 MHz at 100 watts, with an audio frequency response of 30 to 14,000 Hz. Western Electric also produced Apex transmitters for a few years.

WWJ Chief Engineer C.H. Wesser works the gear.

The Apex stations suffered the same "chicken and egg" problem that broadcasters have since seen many times with new technologies — a lack of commercially available receivers. The tuning range of most all-band radios in the mid-1930s stopped at about 20 MHz, and only a handful of models tuned the "ultra high frequencies." Some stations offered converter boxes to the public that would shift the tuning range of standard shortwave radios up to the Apex frequencies.

Another problem was skywave interference between Apex stations. The FCC's solution was to create 75 channels from 41.02 to 43.98 MHz, separated by 40 kHz. The stations used amplitude modulation, but a few asked for permission to transmit with the experimental and still unproven Frequency Modulation (FM) method. Major Edwin Armstrong, the inventor of FM, was among the first to receive authority to transmit FM from his station W2XMN. The FCC sent its engineers to New Jersey to investigate, and they were thoroughly impressed by the Armstrong station's coverage. They listened to the station 50 miles from the transmitter site. They also heard W2AG from Yonkers, operating on 110 MHz with 500 watts. They reported back that FM was clearly superior to AM.

During March and April of 1940, the FCC held a series of hearings about FM. On May 20, it announced the assignment of thirty-five 200 kHz-wide channels above 43 MHz for FM. All existing experimental high-frequency licenses, both AM and FM, would terminate on Jan. 1, 1941, and the FCC encouraged those stations to reapply for new commercial FM licenses. No AM broadcasting on the ultra-high frequencies would henceforth be allowed. The remaining Apex stations began shutting down or converting to FM in droves.

Today, it's evident that Apex was only a transitional phase in the development of FM. Nonetheless, perhaps as many as a hundred Apex stations had existed between 1934 and 1941. From them, broadcasters learned important technical lessons about VHF transmission and reception, which was vastly different than medium-wave.

Transmitters, antennas and transmission lines all worked on different principals. Propagation characteristics of the new "ultra short wave" frequencies were seriously studied for the first time. There were new issues with the use of high-fidelity audio. Without these valuable experiences, the development of the nascent FM broadcasting industry would certainly have taken much longer.

John Schneider is a lifelong radio history researcher. Write him at jschneid93@gmail.com. *Photos from the Detroit News Archives.*

World Radio History

Bright idea.
All of our consoles have LED button lamps. They'll stay lit for — well, practically forever. Let's just say, your kids won't have to change bulbs, either.

Big Shot.
Your station super-sizes everything? No problem; iQ can scale from 8 to 24 faders. Handles even the most zany morning crew, talk show - or anything else you think up.

Control at your fingertips.
See these buttons? You can program them (or the button modules available for Element consoles) to perform routing salvos, system-wide scene changes and more. Because great power requires control.

Smarter phones.
Not only are hybrid controls built into iQ for direct-from-the-board control, the iQ6 phone system connects with just one Ethernet cable.

Network everywhere.
No need for cheesy A/V mixers - RAQ lets you put a networked, professional console anywhere, at a price that'll make the even stingiest GM smile.

Double your pleasure.
Did you know that one QOR.16 console engine will power 2 RAQ or DESQ mixing consoles? Makes your money go further on news bullpens, production pods, ingest stations, etc.

Step to the side.
Dirt and liquids: a console's most hated enemy. Element foils 'em with premium, side-loading conductive-plastic faders: dirt drops past, not in.

Who's da boss?
Clients rave about them, talent loves them: over 5,000 on the air makes Axia radio's favorite IP console.

Built to last... and last, and last.
Element modules are machined aluminum with wear-resistant Lexan inserts for long life. We've even designed custom-molded guides to prevent tears around the fader slot. No "ouchies" here.

Unlimited vision.
Some console makers give you "switched meters" to save costs. iQ does away with that annoyance: high-rez OLED displays meter all 4 buses at once.

A low price shouldn't mean "cheap".
Other companies cut corners on their low-cost consoles. Axia packs in as much as possible. Real conductive-plastic faders, machined-aluminum work surfaces, anodized rub-proof markings, aircraft-grade switches. At a price less than some analog "bargain" consoles.

Rack 'em up.
Turn your Radius 8-fader console into a rack-mount powerhouse. Great for OB vans, performance studios, concert remotes and more.

Good timing.
Unlike those other guys' small consoles, DESQ has an event timer and an NTP-capable clock — built-in, not extra-cost. Because time is money (pardon our pun!).

Small but mighty.
DESQ packs big console power into just 18" square. 6 faders, 2 buses, automatic mix-minus, Show Profiles and more. Perfect for standalone or networked studios.

Axia makes the switch.
No "plug-n-pray" unmanaged switches here; Axia builds our own custom zero-config, built-for-broadcast network switch right into our PowerStation and QOR console engines.

Show-off.
Element lets you store up to 99 Show Profiles - "snapshots" that recall channel sources, bus assignments, EQ settings, even fader positions. So every jock can have their own customized console.

Speak your mind.
Element consoles have comprehensive talkback features. You can talk directly to remote codecs, phone callers, adjacent studios... even individual talent's headphone feeds. Even our most cost-effective boards let you talkback to callers and codecs.

Big power, small price.
Radius loads you up with 8 faders, 4 mix buses, automatic mix-minus, onboard EQ and voice dynamics and more — for just $5990 USD. Shh... don't tell the accountants.

Handsome devil.
Our meters aren't just good-looking; they're designed specifically to convey the most information possible at just a glance. And Axia consoles support VU and PPM metering styles - something you might not find on consoles that cost a lot more.

Available in small, large, and OMG.
Whatever size console you need, Element can handle it, from 4 to 40 faders in single or split frames Huge selection of standard and motorized modules, too.

CHOOSING AXIA FOR YOUR NEXT CONSOLE IS EASY.
SELECTING ONE MIGHT TAKE AWHILE.

When we introduced AoIP to radio in 2003, some folks thought we were off our nut. Today though, broadcasters agree: picking Axia is the right choice. With over 5,000 on air daily, broadcasters have voted Axia the world's most popular networked console.

Who can blame them? Axia fans say that Livewire™ networking is the most intelligent, flexible IP-Audio system in the industry. And that our huge number of partners, with over 75 broadcast products from phones to transmitters that connect to Axia networks, makes life much simpler. They also appreciate our 5-year warranty and 24/7 technical support (not that they need it).

In fact, we calculate that thanks to our huge selection of frame, module and mixing engines, there are at least 32,209,982 different ways to order an Axia console. With that many options, you'd better get started now! Mmm... don't you just love that new-console smell?

AxiaAudio.com

Available in the U.S. from BGS: (352) 622-7700

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World Radio History

Stop With the Freebies

Sales peeps: Know what you're selling, and set your price

PROMO POWER

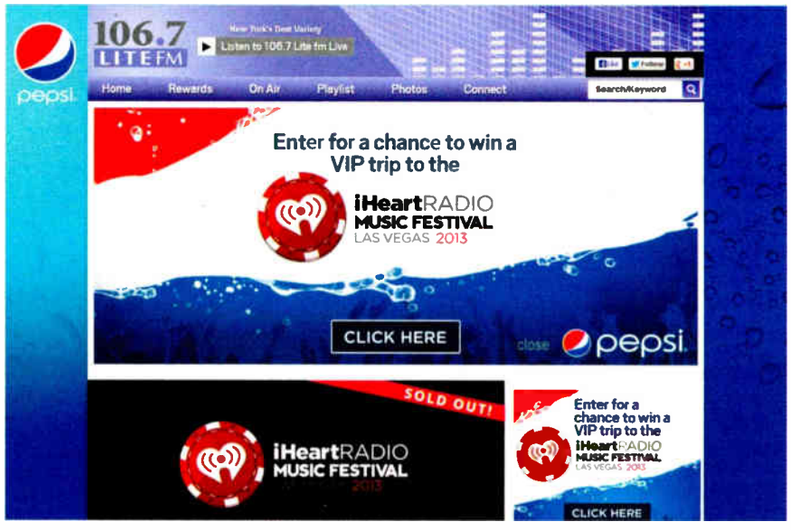
Mark Lapidus

I went on a few sales calls; our last stop was with a beer distributor. You can imagine how unhappy he was when he learned that the new GSM was finally putting an end to the station's "bonus" policy.

The following version of his diatribe to our sales rep is a lot cleaner than the original: "Bull turkey! The last time I signed an annual with you guys, I got a thousand bonus spots, online ads were free and you gave me five free bar appearances. You think I'm gonna take this sugar-filled news from you sitting down?"

Why do radio station sales people give away the store for free? Because they can! It takes a strong general sales manager to change the policy and stick with it long enough for clients to reset expectations. The long and short of it is that, yes, this is a fight that can be won with stick-to-it-ness and compromise. It may mean dropping rates temporarily for certain clients, or coming up with special incentives such as weekend trips, but it must be done.

For skeptics, I can state only that I've witnessed many stations successfully make the transition. There is a basic economic premise that says a price can be reset if the customer can believe the logic behind it. And this is indeed a logical change because no businessperson truly believes a product should be free.



Take a lesson from the big boys and incorporate sponsorships into your online presence. Here, Clear Channel's WLTW(FM) in New York promotes the iHeartRadio Music Festival; note the multiple Pepsi logos.

TAP, TAP

Let's tackle online sales first, as this is a growth area for many, but traditionally poorly monetized by radio.

Plain and simple, no matter what your *uniques* or *pageviews* amount to, they will not be large enough to compete with the big guns. The traffic numbers from major national sites will kill you in your own city. However, your advantage is that you can tap into something they can't: Local sponsorships, section by section.

This can include complete page takeovers with client branding covering the sides, logo at the top of each page and fixed pre-roll on any video that runs in that particular section.

find easily on those sites. Your clients will be most interested in how you can help them obtain more followers. Accomplish this through contesting, personality endorsements and incentive campaigns; for example, "The first 50 people who follow PJ's Nightclub on Twitter get free tickets to Thursday night's dance party."

BEEP, BEEP

Some say that SMS (text) has seen its day. Don't believe them. While the media world may be crazy about Twitter, the average person is still texting like crazy. Reaching these folks on their mobile phones with real information and advertising can be quite rewarding.

Depending on how active you are with texting, you may wish to sell a sponsorship monthly or annually. Some texting systems allow listeners to sign up for scores and other bits of info, all of which can contain sponsor messages.

CLICK, CLICK

Because you have radio and websites, you are in an excellent position to help any company that uses photography or video to promote or sell what

A client who pays nothing to get something won't respect you in the morning.

Exclusively owning a piece of the action is a lot more appealing, and certainly more effective, than just buying banner ads at a cost-per-thousand from a big site. Be sure to include the client name when promoting the site on-air, and the fact that this is included in the price of their sponsorship.

For certain sections, station clusters may want to push the sponsorship concept across all the station sites. For example, weather on each site could have the same sponsor.

TWEET, TWEET

Can social media be sponsored? You bet! You must be careful not to violate the terms of service of Facebook, Twitter or Instagram, which you can they do. Examples: Wedding and event planners have pics to share and use to sell their services; websites such as local sports blogs need traffic awareness; even golf courses love to show off their grounds. Your tactic is to get pics up on Instagram or on your own site and use those to drive interest in commercial products.

And those bonus spots? They are the bane of our industry. If you have to utilize inventory to lower cost per point, at least assign a reasonable dollar figure. Besides, at the end of the day, a client who pays nothing to get something won't respect you in the morning.

Mark Lapidus is president of Lapidus Media. Reach him at marklapidus@verizon.net.

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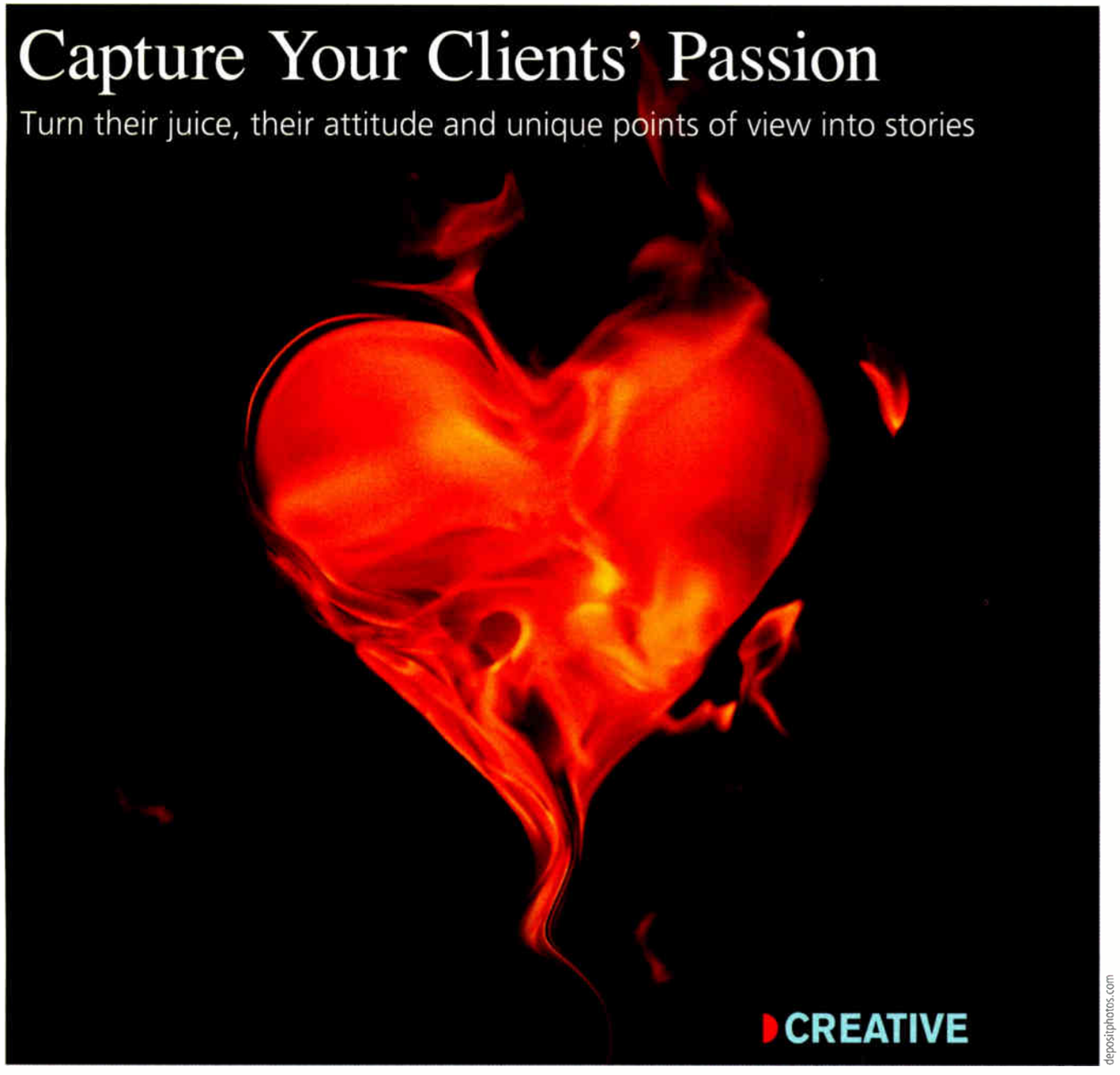
Capture Your Clients' Passion

Turn their juice, their attitude and unique points of view into stories



depositphotos.com

BY JEFFREY HEDQUIST

What are you passionate about? What do you do for fun? What activity would you do for the rest of your life, even if you weren't getting paid for it?

The answers to those questions are what many of your clients do for a living.

Most of them didn't create a financial analysis of their geographic area, determine an unfulfilled market niche for a dance academy, music store, massage clinic or an auto detailing center, and then proceed to open one.

No — most are just excited and enthusiastic about their enterprises, which often began as hobbies, interests or skills that they then turned into businesses.

They're passionate about their products, services, people they work with and customers.

Want to create a campaign that stands out? As a marketing partner, ask your clients why they got into the business and encourage them to tell their stories. Capture the lightning in a jar. Transmit your clients' passion to your audience in their commercials and you'll help them succeed.

CONTAGIOUS

Why does this work?

We all love to hear about what someone actually loves. It's real, it rings true and doesn't sound like advertising.

Most of your local direct clients are entrepreneurs. They'll each have their own version of passion: quiet, humorous, intense, heartfelt or dramatic.

You can capture passion from owners, customers, partners or employees. They won't all have it, but the ones that do will make your job easier.

As you talk to them, listen for the things that excite them about what they do. Passion is contagious; and radio, when done right, is viral.

Remember, when you have this meeting with your client, record it.

Yes, you should take notes, but you won't be able to write everything down fast enough to capture the good stuff — the passion. Plus, it'll take your attention away from following your client's train of thought.

There's no excuse not to use your laptop, your iPad, iPod, your smartphone, any of the dozens of available handheld recorders to capture your client's input. Let them know you want to make the best use of their time and accurately represent them.

When you turn their juice, attitude, electricity and unique points of view into stories, you'll have commercials that will get attention and touch the hearts and imaginations of listeners.

After you record their stories, you can use a variety of approaches:

- Edit them into segments using their voices.
- Paraphrase their words and have other voices tell their stories.
- Use a single voice, or multiple voices with music and sound effects.

Just be careful not to lose the original passion when you translate it into commercials. I've used this technique with great success for fast food chains, fertility clinics, glass replacement shops, home theater installers, ski resorts, landscaping firms, automobile dealers and many, many others.

Remember, we're not just selling radio. We're helping businesses survive and prosper, helping families, changing lives and rebuilding local economies. It's a big responsibility, but by simply sharing your client's passion with your audience (and now you have some additional ways to do that), you can build success for your client and for you.

For more input on how to effectively reach clients, email jeffrey@hedquist.com.

PRODUCT SPOTLIGHT ADVERTISEMENT

Audio-Technica Extended-Handle Interview Microphones

With the new BP4001 (cardioid) and BP4002 (omnidirectional) dynamic microphones, Audio-Technica introduces its highest-quality interview mics, tailored for extremely clear and articulate reproduction of spoken words. Featuring extended handles that easily accommodate microphone flags, both microphones are ideal for all aspects of broadcast and remote newsgathering. Designed to provide exceptional isolation from handling noise, the BP4001 and BP4002 are ruggedly built to withstand the jostling expected with life in the field. Each microphone offers a 3-pin XLRM-type output connector and comes equipped with a windscreen, carrying case, protective pouch, and stand clamp.

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World Radio History

PROGRAMMING

Your Best Salespeople Are on the Air

BY GARY BEGIN

Obviously, programming and format are the building blocks for any radio station. But the personalities that people recognize on their airwaves are what keep the building standing. This is the main reason most jukebox formats fail to deliver long-term results.

Well-coached, developed on-air talent can be extremely influential when they understand that they are professional persuaders and sellers.

People tune to radio for various reasons: music, talk, humor, news, information and relaxation. It's that basic. When listeners tune into a station, they must be sold on the idea that what they are hearing on your station is what they want. Music sells a station. Information sells a station. Personalities sell a station through creativity, voice quality, humor and relevant information such as traffic and weather reports, topical discussions, and so on.

The better the information, humor or entertainment, the easier it is to keep listeners tuned to your station. Once listeners are sold on the idea that your station is the one they are searching for, they will be hooked until the time when another station sells them a better product.

Wikimedia Commons

Dynamic and powerful on-air personalities like Angela Yee of New York's Power 105.1 FM can be your best salespeople.

The best on-air talent sells the station to each potential listener in an emotional manner, one person and one element at a time. It's the program director's job to see that every air personality understands how to accomplish this through coaching and air check sessions. Done properly, your station will see enormous benefits through better programming and higher ratings and revenue.

Gary Begin, with partner Steve Bianchi, is a radio consultant, researcher and strategist with Identity Programming, a multi-format consulting firm specializing in small and medium growth markets. It is based in Jackson, Tenn., with offices in Warwick, R.I. Reach him at garybegin@jaxnet.net.

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

MARKETPLACE

CROWN, ECRESO UPGRADE:

Transmitter makers Crown and WorldCast's Ecreso look to be getting along quite well in the wake of their recently announced partnership.

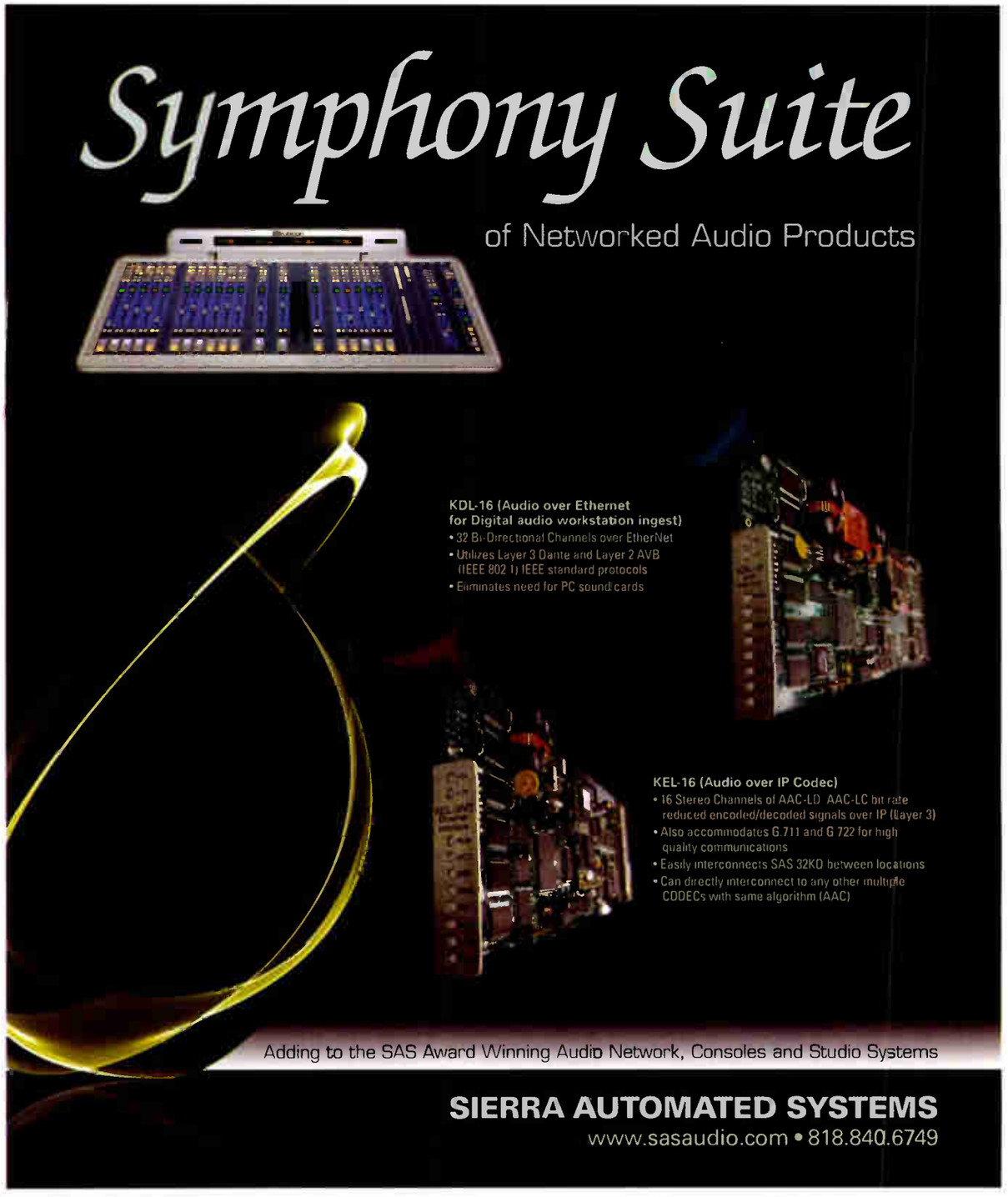
Together they have announced an upgrade to the software inside the Crown E-Series and the Ecreso Helios FM transmitter lines.

Version 1.1.6 for the two peas-in-a-pod features improved RDS encoding and an improved limiter. This is a free upgrade.

Owners of the TCP/IP optional package will see what is called the "Advanced Measurement Interface" for remote monitoring and diagnostics. Available are measurements for RF spectrum, MPX spectrum and audio spectrum, along with peak meters.

Also available is an optional audio back-up with SD cards.

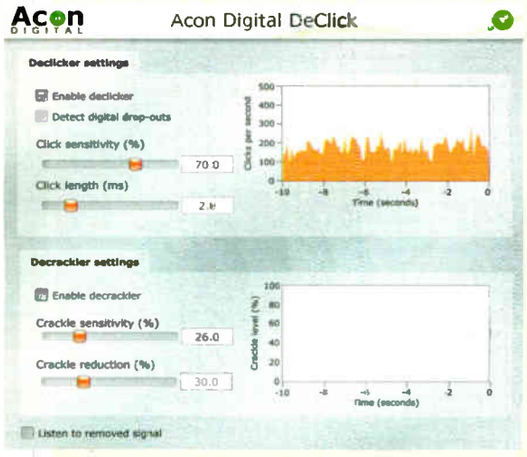
Info: www.crownbroadcast.com, www.ecreso.com



World Radio History

MARKETPLACE

RESTORATION SOFTWARE: German software developer Acon Digital is probably a new name to many in the U.S. The company is hoping that its new Restoration Suite will change that.



Pegged at $99, the plug-in package includes the expected de-noise, de-hum, de-click (shown) and de-clip modules. These tools offer more than just presets. The modules offer controllable parameters such as threshold, reduction, frequency, harmonics, sensitivity along with variable filters, learning and adaptive controls and graphical representations.

Restoration Suite is available in Windows XP, Vista, 7 and 8 (including a 64-bit version) and Mac OSX (10.7 and higher) in VST and AU flavors.

Info: acondigital.com

DON'T BE ZAPPED! Broadcasters, especially those in the South and Midwest, know all too well that lightning is a serious threat to facilities and personnel.

Equipment retailer LBA Group is promoting a line of portable and fixed lightning masts. These masts screw together with fixed-length aluminum pipes and have a tripod base that can be secured with weights, sandbags or heavy sacks.

In addition, the series has grounding spikes and cables along with the "air terminal." The air terminal is the bushy metallic device at the top of the mast that dissipates the electrical charges that arise. A nylon bag holds the whole system. These masts are rated to withstand 100 mph winds.

Info: www.lbagroup.com

APT UPGRADES: Codec maker APT, part of the WorldCast Systems family, has announced a group of upgrades for its NextGen (shown), iP Decoder and Oslo products.

Labeled System Release 1.1.0, new features include support for SNMP v1/2c and an improved alarm system.

Also helpful is compatibility with Audemat's ScriptEasy control, monitoring and automation scripting language along with a Validation Engine for correct and accurate configuration of codec settings.

In addition, the GUI has been tweaked and a tone generator has been added.

Info: www.aptcodecs.com

JBL SPEAKS: Speaker maker JBL has announced two additions to its LSR powered studio monitor family — LSR305 and LSR308. They are dubbed the 3 Series.

As the names hint, the 305 (shown) carries a five-inch woofer while the 308 has an eight-inch woofer. The one-inch tweeter on both models is made of woven composite with a neodymium magnet.

Both offer JBL's Control Waveguide technology for what the company says is an enhanced sweet spot. The waveguide is adopted from the higher-end M2 monitor. They also have the Slip Stream LF double-flared passive port.

Amps are Class D digital. Dual 41 W amps power the 305 with dual 56 W amps for the 308. XLR and 1/4-inch are the inputs.

The LSR305 has a reported 43 Hz–24 kHz frequency response range and the LSR308 has a 37 Hz–24 kHz frequency response range. Both have HF and LF trim pots.

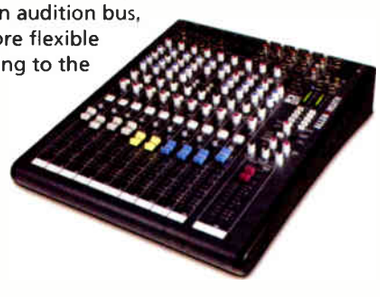
Senior Manager, JBL Professional Recording and Broadcast Marketing, Peter Chaikin said, "Our goal with the 3 Series is to bring a new level of performance and accuracy to the market at most affordable price points."

Prices: LSR305 — $199.99; LSR308 — $325.

Info: www.jblpro.com

NEW SOUND: Pointing to input from broadcast users, Allen & Heath says that it has made some improvements to its XB-14 tabletop mixer.

The XB-142 has upgraded mic preamps, an audition bus, enhanced stereo channel configurations, more flexible monitoring and a matte paint finish, according to the company.



In addition, the EQ for the built-in hybrid has been replaced with variable high/low-pass filter. The mixer is aimed at small and Internet radio stations. The price remains the same, $1,199.

Info: www.allen-heath.com

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World Radio History

Intraplex IP Link 200 Delivers the Audio

Amanda Hopp shares her experiences with Harris Broadcast's IP-based delivery system

The IP Link 200 at work at Crawford Broadcasting in Denver.

PRODUCT EVALUATION

BY AMANDA HOPP

The Harris Broadcast Intraplex IP Link 200 is, as its name implies, an IP-based audio transport designed to provide broadcast-quality audio delivery over a LAN, WAN or the Internet. I found it to be a feature-packed unit, versatile for many applications including studio-to-transmitter link, remote broadcast and even program distribution.

NO ERRORS

The look of the unit is rather simple, featuring front-panel push buttons to navigate the menu and select various elements; "enter" and "cancel" buttons; and bar graph meters that indicate audio levels. There are four meters total, showing ins and outs for Channels 1 and 2. One annoying characteristic is that these meters are extremely bright when lit and tend to bleed into the other meters, making it somewhat difficult to tell what is actually happening.

The front also features an Ethernet port and an audio port to plug in a set of headphones to monitor what the unit is doing.

The back of the unit is busy, with AES in and out, analog left and right in and out, a management port, two WAN ports, external I/O, a serial port and the typical power connection.

The initial set-up of the unit was easy. I plugged my laptop into the management port and went to the default IP address, provided in the documentation that came with the unit. I was able to change the IP address quickly to one of my choosing, as well as create a user name and password.

Interestingly, in order to do anything else on the unit such as set up a stream or change network settings, you cannot be logged in as the admin. I created a different user name and logged in, and was given more menus with which to do my work.

This unit has many uses. The IP Link 200 allows for two bidirectional stereo audio channels and has two WAN interfaces, automatic backup and mul-

(continued on page 46)

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World Radio History

HARRIS

(continued from page 45)

ticoding. The unit allows for encoding of both input channels with different algorithms. This could be RTP (Real-time Transfer Protocol), meaning live programming, or HTTP streams.

microwave link providing 44 Mbps of bandwidth. We don't do any HTTP streams, so all that was needed to test the IP Link 200 in our facility was the RTP stream. Our audio chain is all-digital (AES), so that made the initial hookup simple: one AES cable per unit plus Ethernet and power.

the primary (analog or AES) and secondary (analog or AES) audio streams go down, that backup file will kick in. These features can be set up with a few clicks using the Web interface.

This is one of the system's more appealing features. What happens when a station goes silent? That is, besides

Having two WANs means if one fails, you still have a secondary. Or, if you are set up for it, you can have the second WAN working with a different network such as another IP service provider or a microwave path. A second WAN could also provide service for a separate station or corporate network that needs access to the facility.

Our STL setup at Crawford Broadcasting in Denver is fairly simple. We have an IP codec at the studio and one at the transmitter site, which is connected to the studio via an 11 GHz

After hooking it up and leaving it running for several weeks, I found I had no errors. Normally we'd get some sort of interruption during storms, and through some pretty serious storms at the end of that time period, everything was still running okay. This was rather impressive to me. Stations need a good link, a link that is reliable with great quality. In the several weeks the IP Link 200 was running, not having any type of error was just plain surprising.

Automatic backup is a useful tool. A backup audio file can be selected and if

losing money. How about losing listeners? How often do listeners change a station when things get quiet? I know I do it often. And how often do we change the station back? Probably not as often as one would think. Most people change the station and find something else to listen to; they might not tune back for a while.

Your backup audio might not consist of the normally scheduled content; but it is audio nonetheless, increasing your chances of keeping a listener tuned in.

The backup MP3 is just one file that is fairly small, 6 MB. Typically it would be a loop saying something like "stay tuned for the next program," with some sort of station ID. If you want to play back something bigger, such as a show

PRODUCT CAPSULE

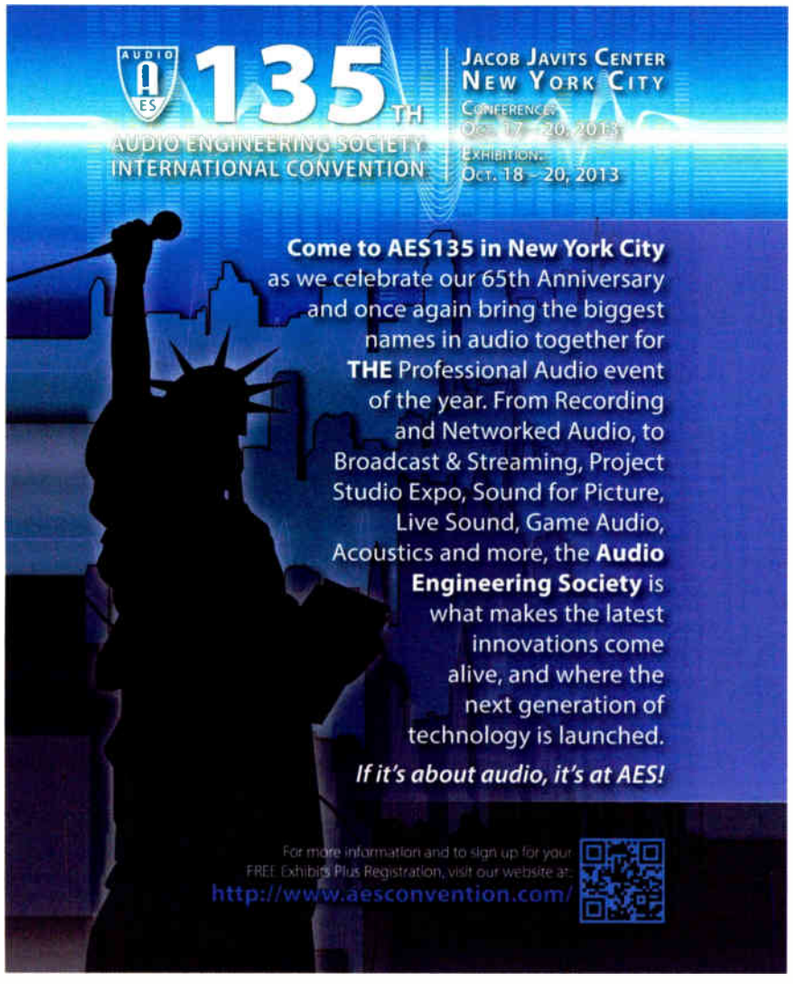
HARRIS BROADCAST
Intraplex IP Link 200

Thumbs Up
+ Reliable uptime in our test, with no dropouts of any kind
+ Automatic backup audio in case of failure
+ Adjustable silence sense
+ Plenty of audio inputs and outputs

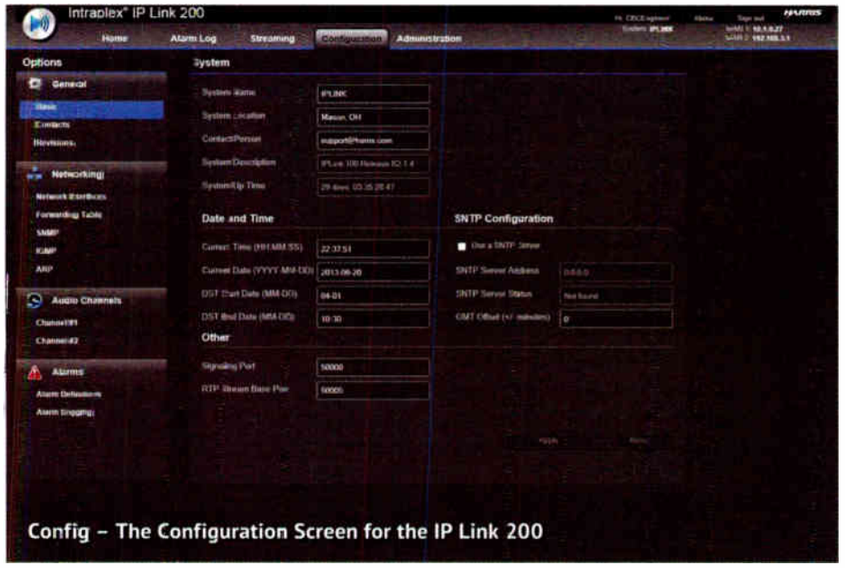
Thumbs Down
– No internal email for sending notifications
– Admin account cannot change certain things
– Overly bright LEDs on front panel

Price: $3,495

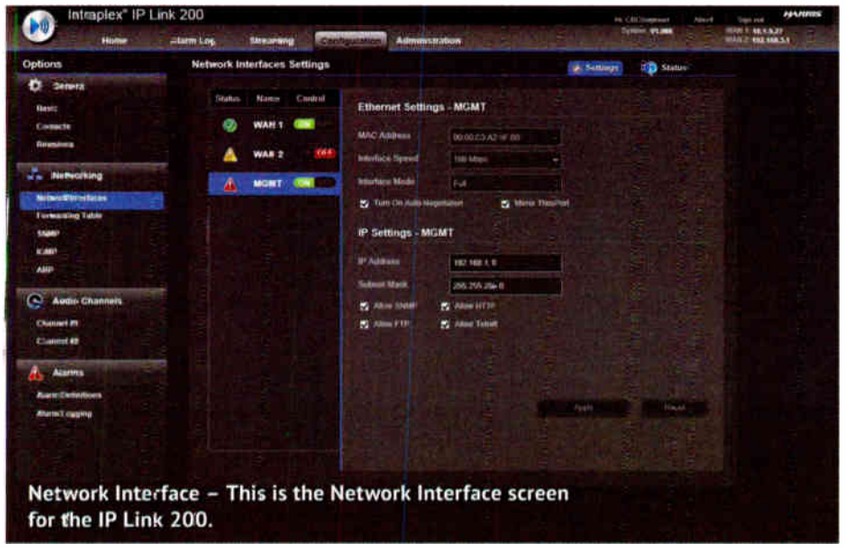
For information, contact Brian Clifford at Harris Broadcast in Ohio at (513) 459-3714 or visit *www.harrisbroadcast.com*.



World Radio History



Config – The Configuration Screen for the IP Link 200



Network Interface – This is the Network Interface screen for the IP Link 200.

that airs frequently on the station, you could hook something like a CD player up to the unit at the transmitter site to have it default over and playback.

For those who have two or more transmitter sites for one station or a second station (or more) airing a simulcast, the IP Link 200 will allow you to connect one unit at the studio end to send to two or more units via the Internet or a microwave link.

MISSIONS

A useful bonus is a built-in silence sensor, which is adjustable. This alleviates having to maintain a separate unit. When the IP Link's sensor detects silence for a set amount of time, it will switch to either a secondary audio source or backup audio source. Then, if the unit is wired in to a remote control unit or something similar, an alarm can be generated for an engineer or someone at the studio to see to know something is wrong.

With this, there is never a question about how soon someone will notice an alarm light on the unit. Notifications happen sooner, therefore getting the primary or secondary feeds back up sooner.

One thing missing is some sort of simple, onboard email notification system. In today's economy, many stations do not have a full-time engineer. Instead, some rely on contract engineers who come when needed. With the option of backup audio sources when the primary fails, how is one to know to check the unit for a failover if it can't send a notification out? A simple system that would send an email or text to a specified address in the event of an alarm would alert engineers to start digging into the issue to restore the primary audio as soon as the switch has been detected or silence sensed.

Unless a station happens to have two completely different networks coming into its building — be it via two Internet services providers or, say, a dedicated microwave link and a secondary of a DSL — I do not see a need for having two WANs (at least not for us in Denver). However, in other markets, we could use the IP Link.

Another complaint I have is with the admin account. I like dealing with a single account on a piece of equipment so it's only necessary to keep track of one user name/password set. However, the IP Link's admin account only creates user accounts. The user account(s) then need to be accessed to make setting changes.

In sum: With a retail price of $1,995 for the IP Link 100 and $3,495 for the IP Link 200, this unit would be a great buy for any station that needs IP connectivity for audio transport.

I would recommend the IP Link 100 if the station's operation isn't too big. The IP Link 100 offers one bidirectional stereo audio channel. The front of the unit lacks the metering and use of the little front-panel screen. And the back of the unit offers your audio input and output without the use of an RJ-45 connector. It is a much-slimmed-down version of the IP Link 200, but I have no doubt would work just as well. The price is right for a smaller market with a station that may not have multiple feeds.

If the station is larger and has more paid programming, the IP Link 200 would be the one to get. When off-air time means money lost for a station, this is the way to go.

Amanda Hopp, CBRE, is chief engineer for Crawford Broadcasting, Denver.

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FREE SOFTWARE

Plugging Into the Alliance

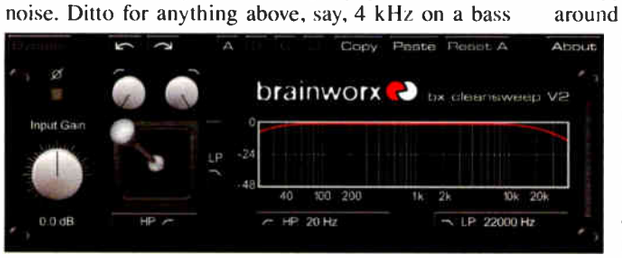
Several manufacturers pool their online resources into one site

The Plugin Alliance is the brainchild of Brainworx CEO Dirk Ulrich. His company, along with European analog audio equipment manufacturers SPL, Elysia and Vertigo, began developing software versions of their outboard hardware processors in 2011. Rather than having each company host their own servers and websites to sell their respective plugins, they decided to pool their online resources into one site, *www.plugin-alliance.com*.

They offer a host of plug-ins from dynamics and EQ processors to mastering tools. And, like some of the other developers we've featured in this column, they offer a few freebies to get customers "in the door." These free offerings include two from Brainworx — Cleansweep and Solo; Elysia's Niveau Filter; and SPL's Free Ranger.

The **Brainworx Cleansweep** is a simple yet effective high-pass/low-pass filter. It's just the thing for getting rid of unwanted high- or low-end audio, sometimes referred to as "infrasonics."

Example: If you have a female V/O track, there's not much point in reproducing anything below 100 Hz in the mix. You'd just be adding equipment or room noise. Ditto for anything above, say, 4 kHz on a bass track. Cleansweep's virtual joystick control allows quick selection of not just the frequency of the roll-off, but also the steepness of the curve. This high-quality filter was taken from their commercially available pro mastering EQ, bx digital V2.



Brianworx Cleansweep

Brainworx Solo is a mid/side stereo processor that allows several ways to dissect and adjust the stereo imaging of an audio signal. Left channel, right channel, M (L+R) and S (L–R) can all be soloed, and stereo width can be adjusted. Special care should be taken with this particular control, as too much can introduce phase issues. As with all such effects, a little goes a long way.

Brainworx Solo

Elysia's Niveau Filter is simple. There are only two controls: EQ gain and EQ frequency. It's sort of a glorified tone control. Adjusting the frequency control sets the center frequency around which the process takes place. Turning the gain control clockwise boosts frequencies above that center point while simultaneously attenuating those below. Turning the gain counterclockwise does the opposite. Once I got my head around that, it was easy to use. On an entire mix, it was easy to dial in a setting that gave it more punch. Extreme settings have a similar effect to a high-/low-pass filter, which might come in handy in the right situations.

Elysia Niveau Filter

The **SPL Free Ranger** is a limited version of their Full Ranger EQ plugin. Where the Full Ranger is a 10-band graphic EQ, the Free Ranger is limited to four bands: 40 Hz, 150 Hz, 1.8 kHz and 16 kHz. It has the ability to store up to four different settings in short-term memory for comparison. It sounds clean but it's obviously intended to get users to purchase the full version.

SPL Free Ranger

Access to these plugins requires free registration with Plugin Alliance. (Hey, they've got to get you on the mailing list somehow!) Installation and activation are straightforward, and documentation is included.

— *Curt Yengst, CSRE*

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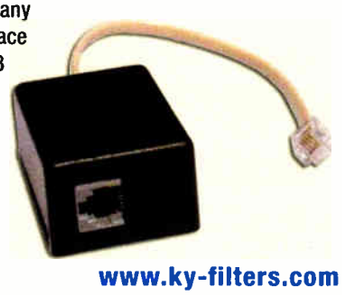

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World Radio History

Start Steering in the 'Connected Car'

Broadcasters should immerse themselves in this space

COMMENTARY

BY FRED JACOBS

The author is president of Jacobs Media, which he founded in 1983.

Radio station operators have had to adjust to a fast-changing kaleidoscope of change throughout the media and technology ecosphere.

From streaming to social media to mobile to new competitive threats, radio's place in the 21st century media landscape has become far more complex.

But radio could always count on the car. Just about everyone drives, and radio's ability to provide myriad entertainment and information options in vehicles has been one of its core strengths.

Over the decades, media and technology have threatened radio's in-car dominance, starting with 8-tracks, cassettes and CDs — the consumer's first effort at customizing their mobile entertainment. Then came satellite radio, an appealing subscription option for those seeking different content and consumers who spend a great deal of time commuting or driving for a living.

But all the while, radio was relatively safe in the cocoon of the driver's seat. The "two-knobs-12-presets" standard kept radio locked in as the primary infotainment source for consumers on the road ... until now.

A montage of images from the Detroit telecommunications conference this year.

CARS MATTER

To appreciate the car's new importance, consider how often business decisions made by modern-day station managers revolve around the automobile.

First, the lion's share of broadcast radio listening takes place while driving. And interestingly, this is even more the case for younger generations. While they may avail themselves of music services such as Pandora, Spotify and YouTube while at home, work or school, in-car options have been more limited in scope.

Our Techsurvey9 — the largest study of media and technology for the radio industry — clearly shows the importance of cars on overall listening. Our Techsurveys explore technology preferences among people who actively use radio. More than half of the latest sample reports that all or most of their broadcast radio consumption takes place while driving, especially Millennials or Gen Y.

Another consideration is that the automotive sector continues to be a primary source of advertising revenue for radio. In fact, for many stations, clusters and companies, it remains the top sector, albeit challenged by upstarts that directly connect consumers via search and more granular metrics.

The last offshoot of this is telematics, offering exciting initiatives by every automaker and Tier 1 supplier to redefine the infotainment offerings in cars. The "connected car" is changing the interface between car companies and consumers, including showroom conversations, model selection and transactions.

And while radio broadcasters have always had an innate grasp of in-car entertainment — from strong morning commute shows, traffic and road information, even pushbutton preset strategies — the current state of cars with "digital dash," and the implications for the radio industry, seem to elude broadcasters at a time when their understanding of this changing space should be growing rather than diminishing.

COUNT YOURSELF IN

This spring in Novi, Mich., Telematics Update held its annual conference, bringing together an enthusiastic group of automotive and media professionals to discuss this ongoing hot topic, "the connected car." Some 2,000 professionals made the trip to the Detroit metro area.

Sadly, the radio broadcasting industry was not well-represented, aside from Arbitron's Dr. Ed Cohen, NPR, iBiquity Digital and my company, jacAPPS.

On the other hand, "radio" was represented by a number of companies and brands, including Pandora, Slacker, Aha and SiriusXM (a platinum sponsor). You have to wonder how the automotive companies and Tier 1s at the event interpreted radio's interest and commitment levels, based on who was, and was not, in attendance.

The automakers are moving ahead on all cylinders, and while each OEM has a different idea of what works, they share similar visions about the value of telematics. Everywhere you went at this conference, you could find more proof that telematics is being driven by content, services and distribution channels — especially the smartphone.

One of the best panels was moderated by Strategy Analytics' Roger Lanctot, one of the brightest minds at this event. He joined three area auto dealers, along with the head of the Michigan Automotive Dealers Association. This marked the first year that car dealers were invited to participate in these conferences, and it turned out to be a riveting panel.

They spoke of the sometimes-tenuous partnerships they have with the OEMs, much like the network/affiliation relationship in radio. They also noted that dealerships are the true connection point between the auto brands and the consumers. The success of the "connected car" doesn't rely just on engineers and technologists. As the panelists noted, problems with consumer adoption and education start and stop with their brick-and-mortar local dealerships.

Everywhere you looked at Telematics Detroit 2013, it was about "the connected car." As suggested by the photo montage (pictured), everyone has a plan, a concept, a platform and a strategy for connecting consumers to their vehicles.

Verizon's Kevin Link emphasized the difference between following trends as a savvy business decision, and merely being trendy.

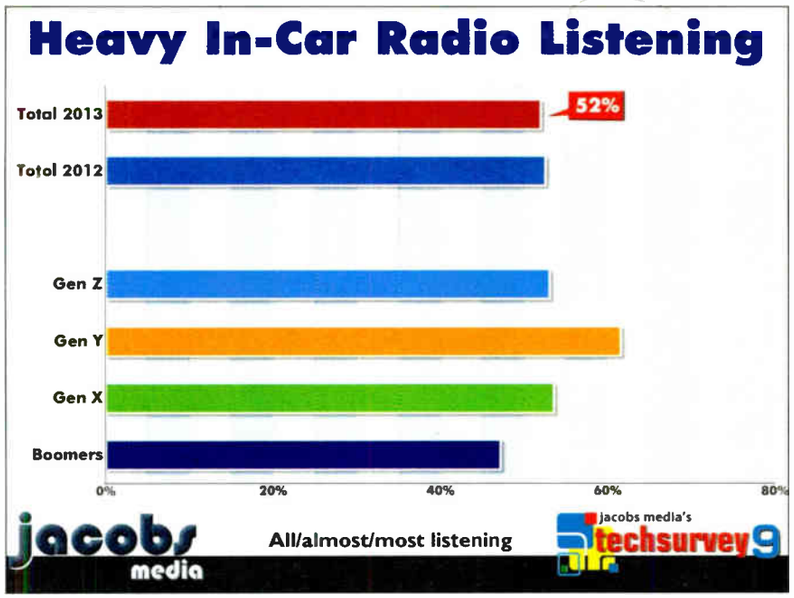
In the automotive space, it's a lot like radio. It's sometimes difficult to differentiate the fads from the bona fide trends. So he broke down "connected car" components into five silos: safety/security, diagnostics, convenience (key fobs, remote features), navigation and infotainment. And everywhere he looked, all roads lead to ...

Infotainment. Content. Programming.

That's because people don't walk into dealerships asking about security features or better "check engine light" diagnostics. Instead, they are talking about their mobile entertainment and the features their next car will offer. Embedded modems and smartphone connectivity are at the epicenter of this conversation.

Broadcasters owe it to themselves, their stockholders and stakeholders to

World Radio History



In Jacobs Media's Techsurvey9, more than half of all respondents report that 'all, almost all or most' of their broadcast radio listening takes place while driving, especially Millennials.

immerse themselves in this space. It won't be long before quarterly investor calls will feature questions that go beyond the future of AM radio, Rush Limbaugh's antics and political ad spending. Analysts are going to start asking about mobile strategies, connected cars and how companies will handle these challenges moving forward.

Telematics is shaping up to be a bigger and more important of radio's future. That's why we attend these conferences. Spurred on by our Techsurveys, we continue to see evidence that it is paramount for broadcast radio to show up, learn and let this industry know we care, we're engaged, we're invested and we're part of this future.

Broadcast radio needs to be here, to become a part of the conversation, and to remind the OEMs and Tier 1s — and the pure-plays — that we were *the* original in-car content and still are #1 today. But it will take more than broadcasters swooping in and throwing a cocktail party to gain credibility in this emerging space. The industry need to commit to partnerships, an exchange of ideas, dealer initiatives and advertising programs that integrate local retailers.

Next year, put Telematics Detroit 2014 on your conference agenda.

TTN

(continued from page 54)

these days, paired with a smartphone that acts as a proxy.

In addition to its best-in-class technical performance, TTN provides best-in-class content. TTN's traffic information is gathered through its network of operations centers around the country. As the largest and most experienced provider of traffic flow and incident information, TTN has a wider local footprint than any other provider.

With 16 around-the-clock operations centers in the U.S. and unparalleled data-gathering resources, TTN provides relevant and accurate traffic data to in-vehicle systems, handheld devices and the largest network of television and radio affiliates. In 2012, TTN partnered with The Weather Channel to enhance its in-vehicle offering by including Doppler RADAR imagery and hyper-local forecasts to be included in the TTN HD+ solution.

Winner of the Telematics Update 2012/2013 Best Navigation Solution award, TTN HD+ launched the first use of TPEG protocol for digital traffic information in the U.S. In addition to data for embedded navigation systems, TTN has also released the Simple Traffic Map, a tile-based, color-coded traffic map that displays congestion levels, which is available in lower-cost vehicles without a navigation system.

TTN HD+ content and delivery is available factory-installed in select Toyota and Lexus vehicles, and is available to all vehicles through aftermarket JVC navigation systems.

For information about the Total Traffic Network visit www.totaltraffic.com.

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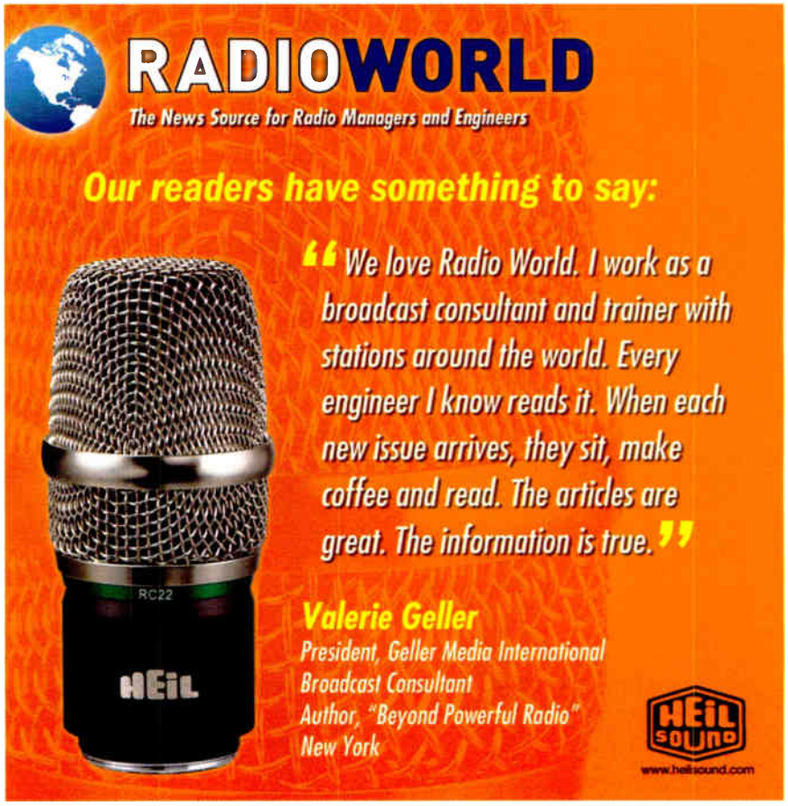


World Radio History

OPINION

TTN's Dash for a Better Dash

Balancing 'cost-effective,' 'ubiquitous' and 'safe' as systems advance rapidly

COMMENTARY

BY JEFF LITTLEJOHN AND KEVIN LOFTUS

Littlejohn is executive vice president of engineering and systems integration for Clear Channel, Media + Entertainment. Loftus is senior vice president of operations for the Total Traffic Network, a subsidiary of Clear Channel.

In recent years, there has been more focus from the automotive industry to develop technology that optimizes drivers' access to information, while at the same time staying safe and focused on the road. Large, colorful displays and touch screens are increasingly common in the "center stack" of new vehicles.

Jeff Littlejohn

Kevin Loftus

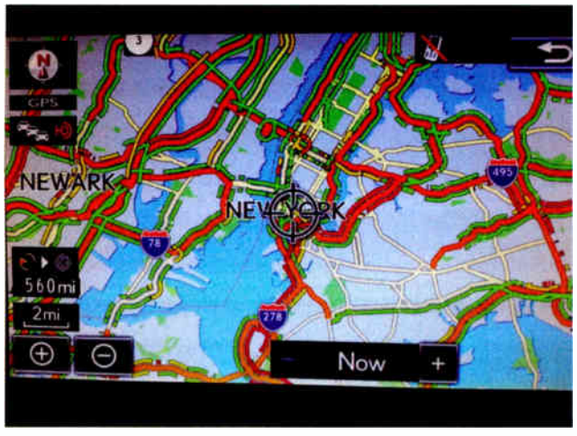
Previously these displays were only found in high-end vehicles or embedded navigation systems. Today we see these displays integrated into cars across all price points, sometimes as standard equipment, and including more features such as a display of vehicle diagnostic information; heightened navigation; and basic infotainment systems like radio, CD players and portable audio players.

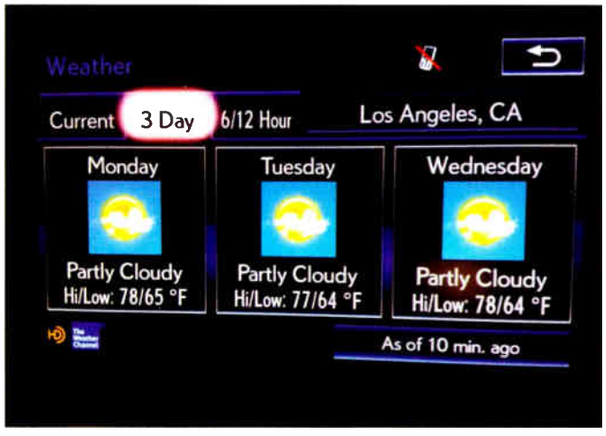
In addition, automotive companies are now using these displays to present content found on the driver's smartphone.

The challenge becomes how to deliver relevant information to the driver in a manner that is cost-effective, ubiquitous and safe.

To the casual observer, the Internet is a good conduit through which to deliver such information. However, Internet-only content delivery to vehicles has several disadvantages: Availability, bandwidth, latency, reliability, cost of integrated devices and the cost of delivering services make this model less than optimal.

Phone pairing with the vehicles can be challenging for some customers, and yet others may decide not to pair the phone with their vehicle. So how can an automotive company deliver relevant information to the dashboard in an efficient, cost-effective manner?





Sample results of Total Traffic Network's partnership with the Weather Channel are shown here.

Total Traffic Network leads the navigation solution industry by providing real-time local traffic flow and incident information with graphics to vehicle dashboards via an HD Radio signal or IP connectivity.

Our latest HD Hybrid technology, branded "TTN HD+," delivers easy-to-access features that include Doppler RADAR; real-time local and national weather forecasts from The Weather Channel; traffic updates; and the ability to receive news, stocks, sport scores and fuel prices.

The TTN HD+ solution provides real-time, cost-efficient information that is constantly available nationwide, even as the car moves through varying signal conditions.

TTN uses HD Radio's Advanced Application Services framework to dedicate a portion of a transmitting station's digital bandwidth to this data content. This content is broadcast and repeated continually for receivers in the coverage area to download the data and provide up-to-date and relevant information to the dashboard. Typically, these systems will have a dedicated sub-tuner looking for a radio station that carries the TTN data package.

TTN offers best-in-class HD digital coverage in the U.S. TTN is a subsidiary of Clear Channel and therefore the data is available on all Clear Channel FM HD radio stations. TTN offers more stations and local HD markets than any other provider.

TTN HD+ is available in large and small markets nationwide. The TTN network resides on all of the Clear Channel stations in any given market, which typically offers three to five stations. This provides additional redundancy to unforeseen transmission failures (antenna, transmitter, generator, data circuits) and also in many markets allows for multiple "angles of attack." Where one transmitter site might be shielded at a receiver location, TTN often offers other signals providing service to same area.

Compared to other delivery technologies such as satellite, TTN provides extensive premium traffic services, and offers bandwidth in each market dedicated to hyper-local content.

When FM HD reception is not available, capable receivers can switch to hybrid IP technology and obtain the same quality content via the Internet through a connected solution. Receiver connectivity can be direct via an embedded cellular device or, more common

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World Radio History

IP. It's the new ISDN.

Meet Z/IP ONE: The "Z" stands for Zephyr.

It's the question on everyone's lips: "What comes after ISDN?" The answer: Z/IP ONE, the Telos Zephyr for IP connections. Broadcasters fell in love with the original Zephyr for its rock-solid reliability and superb audio; Z/IP ONE brings those same qualities to IP remotes.

Is IP reliable? TV networks say so - they use it for HD video backhaul. And Z/IP ONE is packed with IP-codec "smarts" to *ensure* reliability, even over the public Internet. Agile Connection Technology adapts to network conditions, delivering audio quality as good or better than ISDN despite packet loss and jitter. Genuine, high-performance MPEG codecs from Fraunhofer for exceptional fidelity — no lame knock-off codecs. No latency build-up, re-negotiation or fiddly adjustments: Z/IP ONE just works.

There's more: Z/IP ONE incorporates SIP, N/ACIP, and IPv6 standards. The worldwide Z/IP Server connection service helps traverse NAT routers and tricky firewalls. And now, you can do great-sounding handheld remotes using LUCI® LIVE smartphone and tablet apps. All of which makes Z/IP ONE perfect for live remote broadcasts, whether concerts, talk show remotes, off-site talent — even full-time STL links or RPU backhauls.

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Z/IP ONE: the best way to hear from there.™

High-quality remotes are right in your pocket. Z/IP ONE now connects to LUCI LIVE smartphone apps for wideband audio on-the-go.

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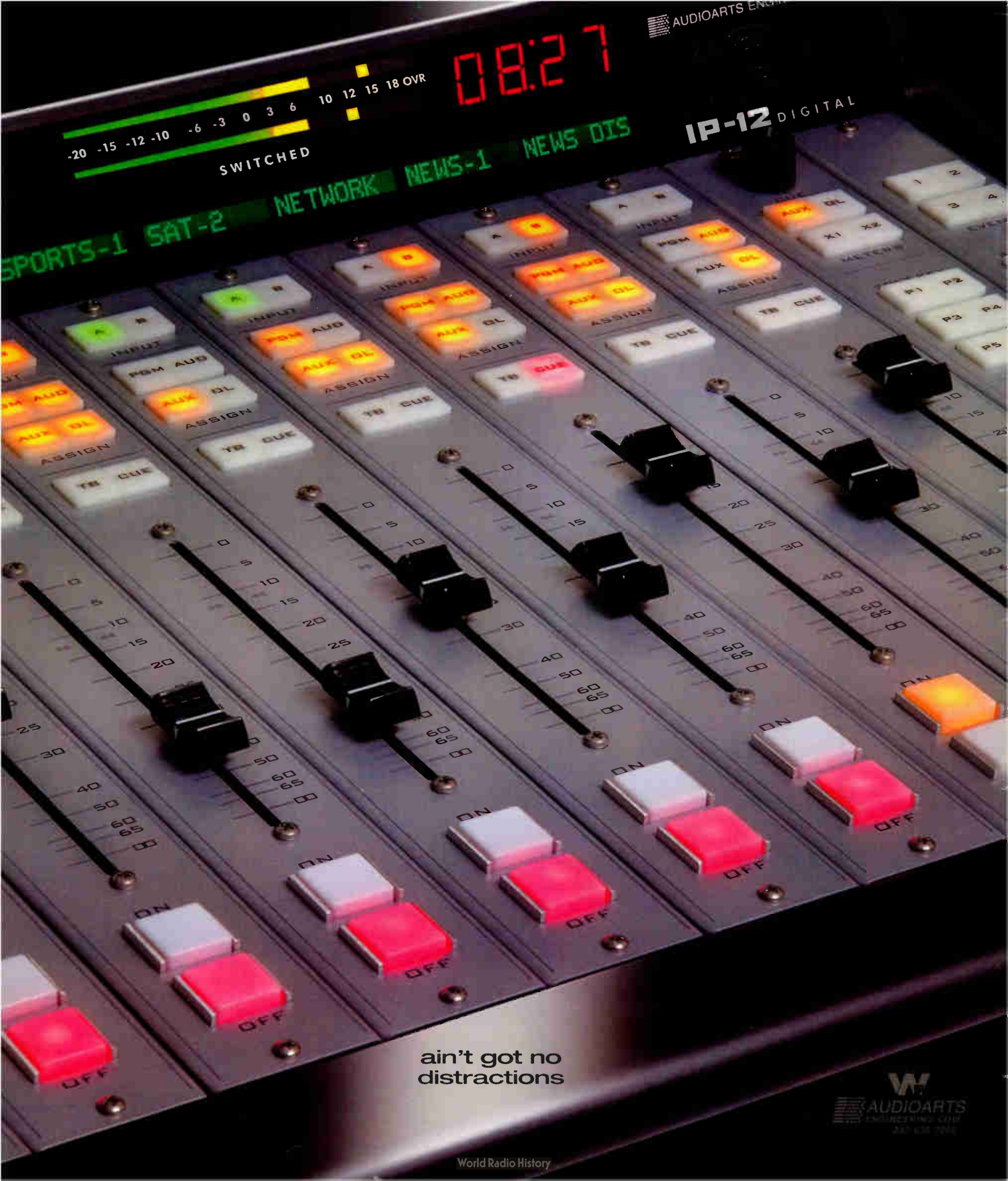

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