



RADIO WORLD

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ONE STATION, TWO UPGRADES

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CE Manufacturers Embrace Connectivity

Companies open up app development, seen as a way for radio to remain relevant

BY LESLIE STIMSON

LAS VEGAS — Some 50 percent of cellphone sales are smartphones. The proliferation of these devices influences automakers and consumer electronics manufacturers as they strive to entice young car buyers and consumers who want to upgrade their in-dash receivers

to full-blown large-screen infotainment systems.

By 2014, an estimated 70 percent of consumer devices will connect to the Internet, according to the Consumer Electronics Association. The trend of extending the "digital lifestyle" into vehicles is apparent as more drivers connect their smartphones into the dash. Automakers and aftermarket receiver manufacturers plan to make more use of big-screen infotainment systems and to give consumers more control over content on those big screens as well as cloud storage options.



Pioneer Electronics was one of several manufacturers highlighting the connected car at CES.

How many apps can be displayed on screen displays is a question in play. And developers race in hopes of positioning

their apps on the first screen that pops up when a driver activates a device.

Automakers are starting to crack open the door on proprietary systems and launching "development houses," a way for car companies to communicate directly with third-party developers — with the goal, among other things, of making apps safe for use in a vehicle.

Radio in all its forms is part of this

(continued on page 5)

Sprint Deal Is a Building Block

BY LESLIE STIMSON

Sprint's announcement that it will put FM analog chips in some of its phones later this year heralds more work for the radio industry and for Emmis Communications. So says Emmis Senior Vice President/Chief Technology Officer Paul Brenner.

Sprint has agreed to activate FM analog tuners in a total of some 30 million devices over three years. The carrier will determine which models get chips, but Brenner said devices will include smartphones and possibly tablets and "phablets," which are large form-factor phones.

Free local FM radio would be delivered on these devices through apps like one Emmis is developing called NextRadio. Consumers today who want to hear radio stations on most smartphones must do it via streaming and thus incur data charges.

Serious negotiations on the FM chip took some six months to a year, according to radio executives involved.

The structure of the legal agreement remained a work in progress in early February.

Emmis is acting as a place-holder or "point" for what will become an industry consortium so Sprint can negotiate with one party, according to Emmis CEO Jeff Smulyan. Under the deal, Sprint would embed and activate FM tuners in a minimum of 30 mil-

(continued on page 3)

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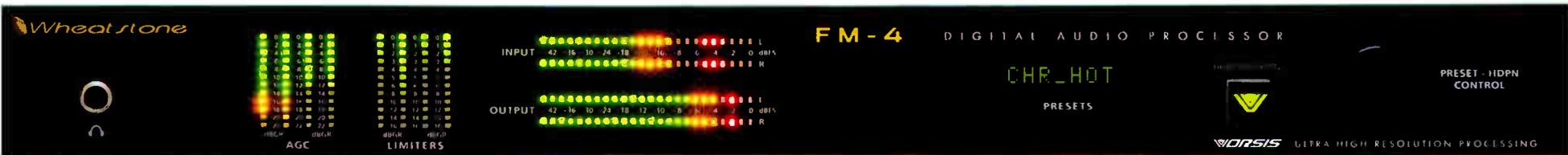
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World Radio History

SPRINT

(continued from page 1)

lion Sprint phones over three years. In exchange, the industry would provide the carrier \$15 million worth of station ad inventory for each of the three years, according to Smulyan.

He told Radio World, "If every broadcaster gives up \$10,000 worth of inventory per year per station, it will easily take care of itself. ... We will translate those into dollars for Sprint."

Smulyan last fall proposed that the radio industry offer incentives to persuade carriers to integrate or activate FM reception. Since the deal was announced, Smulyan has been working to get broadcasters to pledge inventory; he said every major radio group and several smaller ones have agreed.

Broadcasters hope this will serve as the model to encourage other wireless companies to sign on.

"Mobile ad spending is *the* growth business for technology right now," Brenner emphasized.

Reacting to the news, Pandora Senior



Photo by Leslie Stinson

Paul Brenner shows off the prototype NextRadio app in iBiquity Digital's booth. The app ran on a Samsung Galaxy S running Android and a Nokia Lumia 900 running Windows 7.5.

NextRadio app in hopes it will be adopted by others in radio. The app will allow playback of all local FM signals but also provide access to enhanced features that connect to a multitude of content types on the Internet.

Asked whether NextRadio was part of the Sprint agreement, Brenner said, "NextRadio has been presented as a universal FM radio application with the ability to present a common-listener experience and mobile advertising features synchronized with over-the-air radio. Sprint will launch with NextRadio because they need a single party to rep-

Sprint Android and Windows devices.

"We've turned a dirt road into a gravel road," Brenner told Radio World as he demoed the prototype in the iBiquity Digital booth at the CES Show in January.

Shortly after CES, Emmis Senior Vice President/Treasurer Ryan Hornaday shed more light on the deal.

Speaking to the Nobel Financial Conference, Hornaday said NextRadio will be pre-loaded on the Sprint devices, so consumers can "hear over-the-air radio without data charges." But the richer app experience also "opens up a new advertising category for us."

"We can deliver unique advertisements that you can see at the same time you hear the audio," Hornaday said. The app user can see album art and playlists delivered over the backchannel of cellular or Wi-Fi. He described location-based advertising that can include couponing or QR codes, for example.

As noted above, non-Emmis stations that want enhanced content to appear on the NextRadio app will need a licensing agreement with Emmis plus



I'm really digging the "Bone in the Morning" PetCast in it's new 23-54 kHz format!

Vice President of Sales Steve Kritzman told Radio World that in the past, companies valued radio advertising because it was the last thing a consumer heard before making a purchase. Now, he said, that role is filled by mobile phones.

"We're thrilled," said iBiquity Digital President/CEO Bob Struble in response to the chip news. If stations can show the case for FM analog chips in phones, he said, it also helps iBiquity make the argument for HD Radio chips.

The radio industry hopes the Sprint announcement is just the first of many.

NEXTRADIO

Emmis has helped lead the effort to convince wireless companies to offer over-the-air FM reception of local radio signals; the Sprint development is seen as its first big win. For such reception to be possible, though, the consumer will need an app to play that content. Multiple companies could develop such apps.

Emmis has been working on its

resent this commercialized application."

In addition to the ad time promised by the agreement, Sprint will receive 30 percent of the revenue from ads on the app. Emmis will manage that traffic, make sure Sprint gets its money and receive a small management fee, presumably from broadcasters that use the app. The yet-unspecified fee would apply only to stations that use Emmis' TagStation software in conjunction with the NextRadio app; conceivably, stations could do this on their own instead, but they would need to develop an app that complies with Sprint's specs, he said.

At the behest of NAB Labs, Emmis developed a predecessor of the app last spring that included HD Radio. Asked why the initial app will be only analog, Smulyan said carriers didn't want to spend the extra money to include a digital radio chip right now. He characterized the analog chip as a "first step."

Now Emmis' goal is to make the analog app work in several iterations of

its TagStation software — or must build their own source content solution that complies with the mobile app capability and obligations for inventory, reporting and processing mandated by Sprint.

"Through TagStation we know what content is being played," including the songs and ads, Hornaday said. With the TagStation software, the audio is synched with visual elements.

He described the NextRadio app as a revenue share product. "We're paid based on the advertising," Emmis would receive a portion of the ad revenue that airs on the phone to cover the cost of developing the product. Hornaday said, adding the company hopes to roll out commercial smartphone product and an associated broadcaster content network by summer.

Smulyan confirmed that the broadcaster is in talks with other carriers. Hornaday said Emmis would love to have the app on the same platform with other telecom carriers like AT&T and Verizon.

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25-Seven Finds a New Home

Time-management manufacturer is now part of Telos Alliance

Having acquired 25-Seven Systems, the Telos Alliance is now in the business of time-management products and profanity delays. But Telos CEO Frank Foti and 25-Seven co-founder Geoff Steadman say broadcast customers should look for broader offerings, building on the interaction of engineers and ideas that this acquisition has brought about.

Cleveland-based Telos Alliance — parent of Telos Systems, Omnia Audio, Axia Audio and Linear Acoustic — announced the acquisition in January. Terms were not disclosed.

25-Seven Systems, maker of products like the Program Delay Manager and Audio Time Manager, is based in Boston. Its eight employees remain under the new ownership. Steadman becomes president of the new division; also staying are Chief Operating Officer Derek Pilkington, Chief Technology Officer Barry Blesser, Vice President of Sales Rick Sawyer and four members of its R&D department.

25-Seven was owned by those eight plus a small number of others no longer involved. Pilkington, Blesser and

Steadman were the founders.

AKG ROOTS

I recall when 25-Seven launched — it's hard for me to believe that almost a decade has passed since Steadman was telling me excitedly about the first beta units of the Audio Time Manager — but its roots go further back and involve some other familiar broadcast equipment brands.

The core group had its roots at AKG. Digital audio innovator Barry Blesser — who earlier helped launch Lexicon — was consulting for the AKG Digital Products Division in the late 1980s. Derek Pilkington was a vice president of AKG; Steadman joined in 1990 as part of the DSE-7000 digital audio workstation project.

Around that time, AKG acquired Orban and dbx, and built a business center in San Leandro, Calif. When the Austria-based company later decided to move workstation development to Vienna, Pilkington and Blesser worked out a plan to continue U.S.-based development.

In 1994, when Harman in turn bought AKG, “the strategic decision was made to move the DSE-7000 to the Orban brand, since after all, it was a broadcast product primarily aimed at the ‘short-order cook’ style of radio production,” Steadman said.

Pilkington became Harman's president of Orban while Blesser was director of engineering. In 1993, Steadman became product manager of the workstation line, renamed Orban Audicity. Another future 25-Seven exec, Rick Sawyer, joined Orban in 1995. Pilkington later was tasked to head a newly formed Harman Broadcast Group, running Studer in Switzerland and Orban in California; but that entity would be abandoned, and Harman decided to sell Orban in 2000.

The key players moved on to other ventures but kept in touch, Steadman said. “Driven to work together again, we started DSP Composers in 2002, which eventually morphed into 25-Seven.”

In 2003, Pilkington, Blesser and Steadman incorporated and started designing their first product, the Audio Time Manager, intended to help stations manage unexpected events in the broadcast day, avoid collisions with network feeds and create availabilities.

“The working title of the ATM was going to be 25-Seven, but we liked the name so much we appropriated it for the company.”

So you can see why Steadman describes 25-Seven as “a delivery system for a team that preexisted the for-

FROM THE EDITOR

Paul McLane



mation of the company” and talks about the human bond between its principals. Now this small startup becomes the fifth business within the Telos Alliance. Echoing Steadman, Foti suggested that this acquisition was as much about getting the people as the products; and he compared the expected knowledge transfer with a process that occurred after Telos acquired Linear Acoustic.

“I already see myself as a student of Dr. Blesser's,” Foti says.

CORE COMPETENCE

Asked to assess the state of the time-management market, Steadman said, “Certainly there's a real replacement market for profanity delay. You've got certain things that haven't changed much in 15–20 years. We've been trying to put some new tricks to an old story.”

Beyond that, though, the company's time compression products will benefit from the deeper resources of Telos and from technical trends such as the growth in processor power. “We can do things that are more embedded; there are all manner of possibilities for growth here.”

In the transmission arena, he said, time-management products also have become more relevant. “In some ways, thanks to HD [Radio], there's no such thing as real time. Delay management has gotten trickier and more specialized. That's a core competence for 25-Seven. And that's not all we're limited to.”

Conversations about a possible acquisition started in late 2011. 25-Seven had been working with Telos as a Livewire partner. “A big takeaway is the cultural fit,” Steadman said. This sale, “feels like a very natural progression.”

He expressed no regrets about selling the relatively young 25-Seven. “None whatsoever, because the vision survives it, and this baby gets to go to college.”



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evolution, be that analog AM and FM, HD Radio, satellite radio and Internet radio.

What follows is some of the more notable news from the Consumer Electronics Show.

AUTOMAKERS BALANCE CONNECTIVITY, SAFETY

Automakers are thinking about safety and functionality as they look to the future of big-screen infotainment system designs. They're also using smartphone connectivity to entice young consumers into buying new cars.

Customers expect to bring their digital lives in their vehicles and don't want to have to work hard to make that work, said Nick Pudar, vice president of planning and business development for GM's OnStar. GM is opening up its API to other developers so they can customize apps that are safe for the Cadillac Cue and Chevy MyLink, for example. Both systems include Pandora, Stitcher, Tuned-In, iHeartRadio and Slacker, for example.

Livio Founder/CEO Jake Sigal applauds this trend, saying automakers are moving towards a common app standard for the car. "We realize you don't want an app setting off an airbag. People can Facebook themselves into a tree."

For previous generations, driving a car meant freedom, whereas today's 20-somethings seem less interested in cars. "They let their parents drive them around in a comfortable car," a phenomenon that is "frightening" for automak-

NEWS

ers, according to Ted Cardenas, vice president of marketing for the car electronics division of Pioneer Electronics.

GM Chief Infotainment Officer Phil Abram also said the future is not just about connections but safety. "A car is 3,000 pounds of metal going at 65 miles-per-hour. It's not your smartphone."

CONNECT WITH ALPINE, KENWOOD, PIONEER

Experts say receiver trends tend to show up in aftermarket receivers first, because the process of adding to a car platform takes much longer.

Alpine, Kenwood and Pioneer are among aftermarket receiver manufacturers planning to increase their connected car offerings. Trends include in-dash apps for Facebook and Google Local Search; apps that let you control the car with your phone; and voice-controlled dashboards.

Alpine plans a free Tunelt App in March to coincide with release of three compatible head units. Users can download the app onto iOS and Android smartphones and create a user profile including their particular vehicle and sound system. They can swipe and pinch the app to adjust sound settings like time correction or parametric EQ and create settings or choose from presets. Beginner app users are called "roadies" while more advanced users can reach "Master Golden Ear" level.

The Alpine CDE-HDI48BT CD/HD Radio receiver is a head unit coming in

March that's compatible with the Tunelt app. The user can control Pandora on a USB-connected iPhone or wireless Bluetooth-connected Android phone; and the unit features a port to connect to a separate SiriusXM 2.0 tuner. It lists for around \$300 and features App Direct Mode, which allows basic control of iPhone apps; applicable metadata information from the app is displayed on the head unit. Alpine plans to expand this feature to more CD receivers and audio/navigation units.



The Alpine CDE-HDI48BT CD/HD Radio receiver is one of the new head units compatible with Alpine's Tunelt app.

Continuing with the connected car theme, Kenwood plans to introduce approximately 40 aftermarket receivers. Thirteen include HD Radio; 30 control a Pandora app on a connected smartphone. The company also is expanding control of the Aha app and introducing control of iHeartRadio control on mobile phones in 10 models.

For the New Year, Kenwood is highlighting a high-end radio that seems to do it all: AM/FM analog, HD Radio, SiriusXM, Aha and Pandora. The DNN990HD has built-in WiFi to connect with Kenwood's server in the cloud to retrieve Inrix information like traffic and weather data. The DNN990HD ships to retailers in April and will list for \$1,500.

(continued on page 6)

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ELECTRONICS

(continued from page 5)

Hands-free integration with Apple iPhone Siri is featured and in Ford Sync-equipped cars, certain vehicle diagnostics information is displayed. The Sync-compatible receiver "allows you to operate apps and cloud-based content" and share content in the vehicle, according to Kenwood USA Senior Vice President of Consumer Electronics Keith Lehman. The bottom line: "Consumers want connectivity," he told Radio World.



Kenwood's DNN990HD has built-in WiFi to connect with Kenwood's server in the cloud.

Pioneer expanded smartphone connectivity support for its AppRadio platform of products; the manufacturer introduced applications and launched a development center to streamline coordination between app developers and Pioneer, reducing the time needed to establish compatibility between apps for in-vehicle use and the company's platform.

Pioneer now has 10 AppRadio and Advanced App Mode models; drivers can listen to music and use compatible apps and information from their iPhone on the car receiver display. Some three dozen apps are compatible with the platform. New ones include location-based services like Parkopedia and Internet radio like Rdio as well as iHeartRadio for Auto — "iHeartAuto" — Clear Channel's new digital radio app designed for in-vehicle use.

JACAPPS NOW APP DEVELOPMENT HOUSE FOR FORD SYNC

Ford and Jacobs Media company JacApps are working together to get



radio station apps on Ford's Sync system. The change is an upgrade to the Ford Sync AppLink.

The automaker announced that JacApps will be its recommended mobile app development house for the new Ford Developer Program. JacApps has worked with non-broadcasters to build apps as well so any developer with an idea for an app who needs some help building it can turn to JacApps, according to the automaker.

JacApps will provide development and technical support to third-party developers wanting to create voice-activated smartphone apps for Ford Sync AppLink.

Why is app development important for radio?

"The car radio with the big knob is becoming a thing of the past. The dashboard is now a computer," VP/GM Paul Jacobs told Radio World. He adds that finding individual radio stations on these platforms "is challenging."

Given that the radio app developer was based in the Detroit metro, working together was a natural fit, Jacobs told Radio World.

Most of the big-screen infotainment systems have only had room for big national app players, like Pandora, NPR or iHeartRadio, until now. "This opens up the door for any individual radio station to have an app. Maintaining relevance in the dash is critical," said Jacobs.

So far, the station apps will appear as text such as call letters or a station slogan; an icon is planned for a future upgrade. The apps can be for AM, FM, HD Main and multicast channels — any content that is streamed into the app.

Partnering in the announcement was Greater Media, for which JacApps built 16 apps for iPhone and Android. The Greater Media apps with Ford Sync functionality are live in the iTunes App Store and Google Play market.

Stations that want to work with JacApps to get their apps on Ford Sync AppLink would contract with both companies. JacApps will provide support for developers interested in integrating their apps with the Ford Sync AppLink system for voice commands and other functions.

JacApps President Fred Jacobs wrote in a subsequent blog post, "Ford's AppLink has become the first pathway where anyone and everyone can develop apps for their Sync-enabled vehicles." But he advised radio stations, "Even if you adapt your apps to be compatible with Ford's voice commands, you will still want the opportunity to develop apps for the other automakers' systems. ... In order to enjoy distribution with all these automotive brands, radio companies will more than likely have to repeat this process several times. For all their brands."

GM TO OPEN UP APP DEVELOPMENT

General Motors revealed a new flexible application framework that it says will allow drivers to add apps and features to their vehicles after the initial purchase, allowing infotainment systems to be upgraded over time.

The framework enables a new set of vehicle application programming interfaces, or APIs, for developers, allowing them to interact with and build upon the infotainment systems in GM vehicles.

The company will offer a software development kit through an online portal at developer.gm.com. This will allow developers to work with the carmaker in a secure and controlled manner to design, test and deliver relevant, customizable and integrated automotive apps.

The implementation of these apps is incorporated into new infotainment systems, debuting in some 2014 MY vehicles. The systems' framework includes an app catalog that will allow car owners to choose from a menu of applications for the "in-vehicle experience."

GM demonstrated applications from four potential partners for the new app catalog: iHeartRadio, TuneIn, Slacker and The Weather Channel. The catalog, not yet available on GM vehicles, is expected to grow as the company gets ready to launch the new framework.

The automaker says the apps will be unique. "It's not just taking phone apps and making functional in a car, which most car companies do in some form," said Chief Infotainment Officer Phil Abram.

"Instead, GM may approve applications that stem from vehicle ownership. For example, customers may choose to download apps that help them in driving more safely or use fuel more efficiently."

Once these apps are created and have been approved by GM for in-vehicle use, future owners of certain car models will be able to download them to the vehicle through the app catalog.

"GM customers will soon be able to personalize and update their vehicle apps; compared to today, when you buy a vehicle and the infotainment features are fixed and remain the same as long as you own the car," according to Abram.

PURE UNVEILS JONGO

Pure Audio, which now has a U.S. office in the San Francisco area, unveiled Jongo, the first in what will be a family of wireless multiroom audio products. These allow the user to start with a single speaker and add more Jongo products for synchronized audio around the home. The Jongo multiroom



The Pure Jongo S340B portable, rechargeable wireless speaker will be available in coming months.

system also supports the second-generation Pure Connect app.

The lightweight devices can be carried around and positioned multiple ways in a room. "People want convenience and a great audio experience," a spokeswoman told Radio World.

The first Jongo unit is available in the U.S. for pre-order at Amazon.com at \$229. The Pure Jongo S340B portable, rechargeable wireless speaker will be available in black, or white with black speaker grills, with optional user-fit colored grill packs in burnt orange, lime green, mango or white.

IHEARTRADIO EXPANDS REACH; IHEARTAUTO DEBUTS

Clear Channel Media and Entertainment says its iHeartRadio streaming platform is being integrated in more models of Chrysler Group and General Motors vehicles.

At the same time, the broadcaster introduced a made-for-driving application called "iHeartRadio for Auto" or "iHeartAuto," that will enable standardized access to the digital music platform.

Beginning this year, iHeartRadio will be available in-dash on some Chrysler Group vehicles equipped with Uconnect Access Via Mobile, the company's suite of connectivity features. Once a user connects a compatible Apple or Android smartphone with the Chrysler Uconnect Access App, the driver can control and personalize iHeartRadio through the dashboard touch screen.

The iHeartRadio for Auto application offers a safety-minded user interface designed to provide access to iHeartRadio's 1,500 live radio stations while in-vehicle. The new iHeartAuto app will also allow users to create custom stations inspired by artists or songs and provide in-vehicle access to other iHeartRadio features including its thumbs up/thumbs down and station scanning.

The app launched in January with support for Clarion Smart Access cloud

(continued on page 8)



1664: Just what it looks like. Two tin cups and a string. But it transmitted sound!



1876: Alexander Graham Bell's commercially viable telephone.



1900: Phones become fixtures in more well-to-do and steam-punk homes.



1920: Every home is working toward having a telephone!



1936: The advent of the dial desk phone. No more asking the operator to connect you.



1963: Push buttons usher in the thoroughly modern world. Touch tones enter pop culture.



1983: The mobile phone is a reality. Plots in all TV shows get a boost!



2004: IP Telephones begin to become the staple of modern business.



2007: Smartphones are complete communications centers. AND they can sound great!



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server products, Pioneer's AppRadio platform of products including AppRadio 2 and Kenwood's connected receiver DNN990HD. The app will offer a new developer protocol that provides manufacturers a standardized method for connecting to the iHeartRadio platform.

In addition to Clear Channel's 850 radio stations, iHeartRadio includes other groups such as Univision, Cumulus, Greater Media stations, WNYC, EMF's Contemporary Christian Airl and K Love stations, college radio, Cox, Emmis and others.

10 AUTOMAKERS TO OFFER AHA IN 2013

Harman has new automotive and content partnerships for its Aha service.

Ford, Chrysler and Porsche join Acura, Honda and Subaru in announcing their integration.

Aha uses the Harman cloud platform to enable Web-based entertainment and information in vehicles, described as a radio-like format familiar to drivers. Some 10 automakers plan to install Aha in their big-screen infotainment platforms by the end of the year.

That represents more than 50 percent of cars sold in the United States and Canada, and up to 30 percent in Europe, according to Aha.

"Aha lets consumers access their favorite Web content as audio preset buttons wherever they go," said Harman Vice President of Connectivity Robert Acker. He said the service connects people to the Web "in way that makes sense at 65 mph."

Aha has expanded on the 30,000 stations of audio programming available to its customers. New media partners include AccuRadio, Deezer, Rdio and SomaFM. Location-based audio services from SurfLine, CustomWeather, Hear Planet, Park Visitor and ROXIMITY are launching as Aha programming.

Consumers who want Aha's personalized listening experience can download Aha's updated apps for Android and iPhone.

PANDORA PRODUCT INTEGRATIONS

Pandora says there are a thousand ways people can listen to its personalized Internet audio service, in 80 cars and auto aftermarket devices and 760 CE devices. That's compared to some 400 CE devices at this time last year, according to a spokeswoman.

Chrysler Group joined the roster of automotive brands to integrate Pandora into the vehicle, making it the 20th automotive brand partner for Pandora. The company says its audience figures for December showed it had 67.1 million "active listeners," a 41 percent increase over the same period in 2011.

NEWSROUNDUP

PATENT LAWSUIT: U.S. District Court Judge Leonard Stark has set a March 25 hearing for arguments from Mission Abstract Data and DigiMedia Holding Group to lift the existing stay in their patent infringement suit against several large broadcast groups. The plaintiffs claim to hold patents involving hard-disk automation systems. The case has been stayed since November 2011.

STREAMING AUDIO: Streaming listenership typically drops around the holidays, and that seemed to be the case for major streamers in December — except for Pandora. Triton Digital's domestic ranker in that month lists Pandora as number one with 805 million starts and about 1.75 million active sessions, up from 1.6 million in November. Clear Channel's iHeartRadio is second, followed by CBS, Cumulus and Slacker, in that order; those were all down from the prior period.

AUCTION FEES: Fourteen broadcasters are asking a federal appeals court to compel the FCC to return a total of about \$82,000 in auction fees. A decision could potentially affect all broadcasters that took part in spectrum auctions from 2000 to 2011.

ARBITRON: An Arbitron shareholder doesn't believe shareholders of the ratings firm will get enough money from Nielsen's proposed buyout. Joseph Pace filed a lawsuit in Delaware Chancery Court asking a judge to stop the sale. In December Nielsen agreed to buy Arbitron for some \$1.26 billion in cash. The deal still requires regulatory approval.

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iBiquity Sees CE Gains in 2013

Some 60 HD Radio aftermarket car, home products are planned this year

BY LESLIE STIMSON

iBiquity Digital believes HD Radio has momentum in its consumer electronics business, with accelerating growth in the key segments of aftermarket car radios, premier home audio and portable navigation devices. This builds on expansion in new cars that the company reported in 2012.

President/CEO Bob Struble anticipates big gains for HD Radio in 2013 across CE product categories. The company predicts approximately 60 aftermarket car and home products.

Aftermarket car brands Alpine, JVC, Kenwood, Pioneer and Sony are expanding their HD Radio product lines. Home audio brands Denon, Marantz, McIntosh, Onkyo, Integra and Yamaha are refreshing lines with new models. Most of these will launch with "advanced" HD Radio features like Artist Experience, in which audio is synched with visual elements.

iBiquity anticipates 15 car models will be available with HD Digital Traffic this year. An expanded line of Garmin portable navigation devices supporting HD Digital Traffic will also launch this year.

BEYOND AUDIO

Struble said HD Radio is being used for more than audio, and he expects that trend to continue. He pointed to traffic devices that use the platform to deliver data to the car.

For example, Mitsubishi announced that its compact crossover, the 2014 Outlander, will be its first vehicle to have real-time traffic information delivered via HD Radio signals to its dash navigation system. That car is due out in summer.

Now 29 automotive brands offer or have announced plans to offer HD Radio audio, traffic or data features. Many OEMs, including Toyota, Lexus and Mitsubishi, plan to use the digital broadcasts to receive traffic and data information as well.

VW, Chevrolet, Buick, GMC and BMW are the first to offer Artist Experience. Additional automakers, including Lexus and Toyota, have radios in development and plan to offer the feature in coming months, according to iBiquity. AE was available in 12 car models in 2012; that number is expected to rise to 27 this year.

Toyota, Lexus and Mitsubishi were the first automakers to announce the integration of HD Radio to receive both audio and digital traffic services.

Two service providers, Clear Channel and Nokia, have built nationwide networks to broadcast real-time traffic and data information using the HD Radio system. Nokia has partnered with radio station companies that comprise the Broadcaster Traffic Consortium, while Clear Channel uses its own radio stations to support its Total Traffic Network.

Five 2013 vehicles in iBiquity's CES Show booth featured factory-installed HD Radio receivers with advanced capabilities, including a Chevrolet Traverse, Ford Fusion, Toyota Yaris, Ram Pick Up and Hyundai Santa Fe. Struble singled out the Traverse as notable, a high-volume-selling vehicle from one of the so-

called "Big Three" automakers that features Artist Experience.

THE BIG SCREEN

Looking ahead, Struble noted discussion that the federal government might mandate rear-view backup cameras in vehicles for safety reasons. "If they mandate that, you can expect to see a screen in every single car" — and that would have implications at the station level.

"The fact is, if you're an analog station, broadcasting and being displayed on a screen like that, it's largely going to be a blank screen. In most instances it will just be your frequency displayed," said Struble, "whereas we know what the digital display will look like."

If someone is listening to SiriusXM, or Pandora, iHeartRadio or to their iPod in the car, they're going to be seeing that stuff; so radio needs to kind of catch up.

— Bob Struble

Drivers of Chevys, Fords, BMWs or Volkswagens now can see their stations displayed using HD Radio. With advanced data features, Struble says, those receiver displays show album covers and visuals for multicast channels as well as for other HD Radio features. "That screen gets filled up" with digital radio, he said. "We think it's a competitive necessity for broadcasters to have a 21st century look" for their display.

"If someone is listening to SiriusXM, or Pandora, iHeartRadio or to their iPod in the car, they're going to be seeing that stuff; so radio needs to kind of catch up." Struble believes the industry is beginning to realize this as radio people themselves buy cars with big infotainment screens.

CLEAR CHANNEL, TOYOTA TEAM ON DATA

Clear Channel Media and Entertainment's Total Traffic Network and Toyota Motor Sales USA have a three-year deal to integrate real-time traffic data and information from The Weather Channel into dashboards of some Toyota and Lexus vehicles.

These 2014 models, to ship this year, will represent the first real-time delivery of information and graphics inside Toyota and Lexus using HD Radio signals. Audio systems on some models will include an in-dash display of Total Traffic Network services.

Features will include Doppler radar and weather forecasts from The Weather Channel and Clear Channel's TTN's traffic updates. Drivers will not need data plans while in range of 350 or so HD Radio stations carrying the data. For vehicles with its Entune media system, Toyota plans to expand service coverage beyond HD Radio station boundaries by providing the services through a customer's cell phone.

Drivers will be able to access The Weather Channel's Doppler weather radar overlaid onto their existing in-dash navigation map as well as forecasts for 120 cities. Traffic maps and incident reports are updated every two minutes; they offer current conditions as well as 15-, 30- and 45-minute predictive traffic information.

Clear Channel President of National Media Groups Kevin Dorsey said the agreement highlights the company's ability to leverage its platforms "to bring consumers what they want, where they want it and without annoying subscriptions."



Photo by Leslie Stimson

iBiquity executives Jim Spencer, Jeff Jury and Bob Struble at the CES Show. Struble said he anticipates big gains for HD Radio in 2013 across consumer electronics categories.

ACTIVE ALERTS

iBiquity also demonstrated consumer radio products supporting Active Alerts.

This technology allows radio stations to broadcast notifications from the Emergency Alert System through the HD Radio digital broadcast system.

The notifications will generate pop-up text messages and trigger wake-up/snooze capability on compatible receivers during weather emergencies or other local events. Products such as the commercially available JVC KW-NT810HDT carry the feature. iBiquity also demonstrated the feature on an Insignia Narrator; it has previously showed a prototype.

An HD Radio receiver that supports Active Alert will be able to receive an EAS Common Alerting Protocol message from a station that is using Active Alert-enabled HD Radio transmission equipment. If the receiver is off but still powered, it scans the band looking for an HD Radio station that provides the Active Alert service. Once found, the unit rests on that frequency; when the station sends an alert, the unit receives it immediately. The radio "wakes up" and delivers the alert.

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Consultant Buc Fitch is at it again: He figured out a simple and inexpensive solution to those ripped up, ratty handles found on portable electronic gear.

WORKBENCH

by John Bisset

Read more Workbench articles online at radioworld.com

Buc's classic Moseley 450 MHz RPU transmitter needed the upgrade. He provides this as a client loaner for many stations, for remote pickup events, as well as path testing. As you can see from Fig. 1, the carrying handle was getting a little "long in the tooth."

A diligent search on the Web could not identify an exact replacement, so Buc settled for a somewhat "universal" repair part from a luggage shop in Maine. Its website has innumerable nifty and related items, not just handles for cases. You'll find fabrics, corner protectors and other accessories. I posted the link at radioworld.com/links.

The original Moseley handle used three #6-32 screws at each end, under the decorative cover (to secure it), as seen in Fig. 2. This cover comes off, hinged from the extreme ends, and can be accessed by tilting up the grip side, exposing the tops of these screws.

Be careful removing the old handle, taking special care not to lose the screw hardware into the unit. Buc dropped a

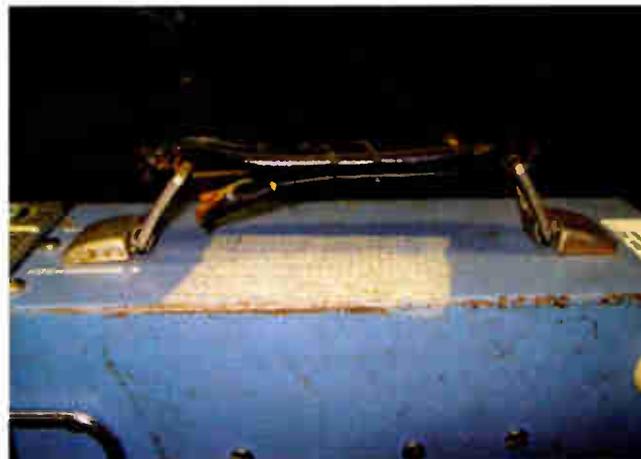


Fig. 1: A handle whose retirement time has come.



Fig. 2: Expose the mounting screws.



Fig. 3: The new handle uses a single #6 screw attachment on each end.

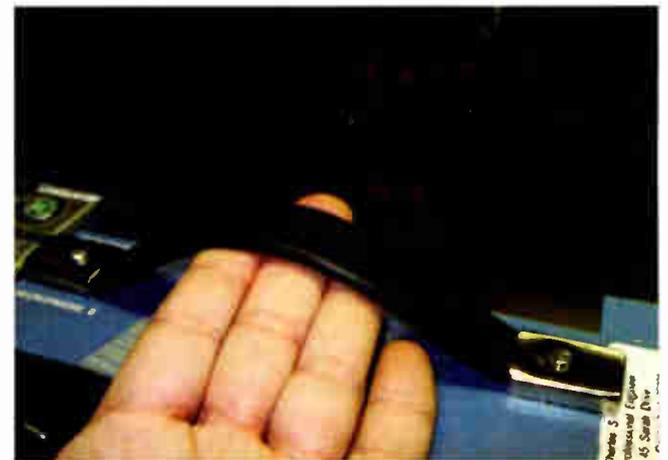


Fig. 4: Mission accomplished.

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WE STILL REMEMBER



After selecting some sexy, plated, ultra pan head bolts with a matching nickel look to the handle, he was ready to begin assembly.

lock washer and it took him 10 minutes to find it in the guts of the device. He finally located it pinned between a cable bundle and a PCB.

Buc's new handle uses a single #6 screw attachment on each end, pictured in Fig. 3. The handle is captured and slides over the screw shaft, enlarging the grip that normally lays flat from the spring action of the metal sleeve that is encapsulated by the rubber outer grip, as seen in Fig. 4.

However, to keep the handle in place,

(continued on page 14)

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WORKBENCH

(continued from page 12)

and to avoid rotating the grip ends, there are two small "cleats" on the securing covers. After selecting some sexy, plated, ultra pan head bolts with a matching nickel look to the handle (no mounting hardware comes with the handle), he was ready to begin assembly.

Fortunately, one of the existing bolt holes, the back-center one, was nearly where it was needed. Using the selected bolts, Buc positioned the end cover precisely and marked the location of the new holes needed to "sink the cleats."

After drilling the end closest to the back of the Moseley, the cover settled down flush. On the other end, there was some conflict with a cover screw. Some judicious snipping with the nibble tool made way for the errant screw head and allowed the cover to sit flush on the instrument.

Because these two bolts and the covers carry the entire weight of the unit, make certain that the bolts you select have broad, wide heads.

On the inside, use a flat or fender washer along with a lock washer to make certain that the load is distributed

and that it all hangs together forever. Reach Charles S. "Buc" Fitch, P.E., at fitchpe@comcast.net.

For another take on this topic, see the 2012 Radio World story "Give Your FIM a New Handle," also to be found at radioworld.com/links.

As broadcaster Robert Richer writes, "P.T. Barnum was right about there being a sucker born every minute."

After our feature on the conductive silver grease in the Feb. 1 *Workbench*, Robert sent me an offer for a tube of rare CB Antenna Grease, which he found on Craigslist.

It was only \$250 for the tube, and it was designed by the Department of Defense. (You know, the DoD had a lot of CB radios in the day!)

The ad goes on to say that this kind of grease was banned by the FCC, because of its efficiency. It makes your signal slide out your antenna faster and with less friction. I wonder if the \$250 tube ever sold?

Robert Richer can be reached at cfaricher@snet.net.

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

WHO'S BUYING WHAT

OMT announced recent iMediaTouch Radio Automation purchases. U.S. users include **WRR(FM)** in Dallas; **KVUU(FM)** in Longmont, Colo.; **KEXP(FM)** in Seattle; and **WQZQ(AM)** in Nashville, Tenn. In Canada, recent iMediaTouch radio automation users include **Jim Pattison Broadcast Group**, which chose iMediaTouch V4 for its Kelowna and Prince George stations in British Columbia, and another in Grand Prairie, Alberta.

Wheatstone reported a number of recent sales.

University of Northern Iowa's **KUNI(FM)** (Cedar Falls, Iowa) ordered six LX-24 control surfaces and 23 WheatNet-IP Blades. **WBSU(FM)** (Brockport, N.Y.) ordered an E-6 control surface and E Series satellite cage to expand an existing network. **Cogeco** (Quebec) purchased WheatNet-IP AoIP systems for five locations and also added to another WheatNet-IP system through Marketing Marc Vallee, Quebec.

Ocala Broadcasting (Florida) purchased two E-1 control surfaces and a WheatNet-IP network through BSW. **CHIN Radio** (Ontario) purchased an Aura8-IP Blade audio processor to add to a WheatNet-IP system through Ron Paley Broadcast, Canada.

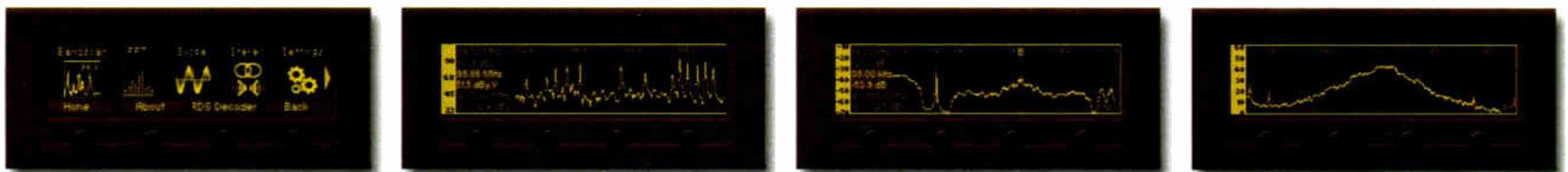
FM station **KMME**, based in Cottage Grove, Ore., and broadcasting to the markets of Eugene and Springfield, is using a new **Harris FAX50** exciter. The noncom station airs at 100.5 MHz and is licensed to Catholic Broadcasting Northwest Inc.

Axia also reported recent sales. The **Minnesota Twins** organization upgraded to PathfinderPC PRO software to handle routing automation for its Axia studio network. **Radio Free Europe** (RFE/RL) added to the IP Intercom installation in their Washington headquarters with a selection of IP Intercom Desktop stations and IP Intercom Modules for their Axia Element consoles. **Michigan State Radio's** Spartan Sports Network in Holt, Mich., installed an Axia DESQ console with QOR.16 integrated console engine.

The **U.S. House of Representatives Recording Studio** has employed **Telos Systems Hx1** and **Hx2** digital hybrids.

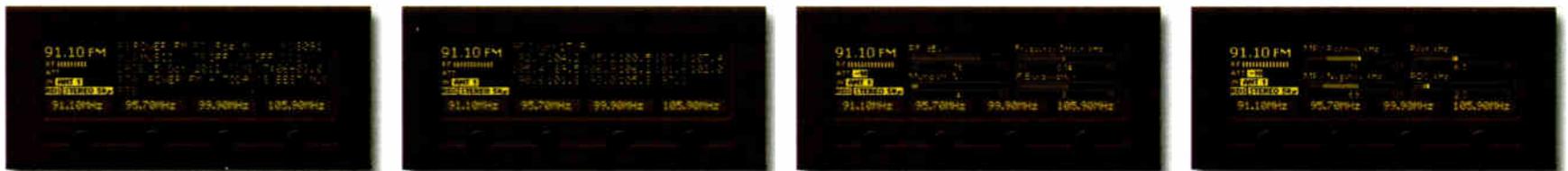


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The more you saw, the more convinced you were that IP consoles made sense for your station. Problem was, you had small spaces to work in. Some behemoth board that looks like a '78 Oldsmobile just wouldn't fit. But there was no way you'd settle for some cheap plastic PA mixer that looked like a refugee from the church basement. "Wouldn't it be great," you thought, "if someone made an IP console that didn't take up a whole room?"

Then you saw the new RAQ and DESQ consoles from Axia, and your problems were solved. With the power and features of a big console, but minus the ginormous space requirements. RAQ will drop right into those turrets in your news station's bullpen -

the reporters can send their finished stories right to the studio. And DESQ is perfect for the auxiliary production rooms.

But what sealed the deal was finding out you could run two RAQ or DESQ consoles with just one Axia QOR.16 mixing engine — you know, the one with all of the audio I/O, the power supply and the Ethernet switch built in. That brought the cost down so low that when you told your GM the price, he actually didn't swear at you (for once). Make another decision like this, and you might just be changing the sign on your door from "Chief Engineer" to "Genius."

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Sun Rays Power 10 kW AM Station

Entercom's KEZW enjoys benefits of its new 300-by-80-foot solar array

GREENRADIO

BY TOM VERNON

Less than a year after groundbreaking at Entercom Denver's KEZW(AM) transmitter site, ribbon-cutting ceremonies were held in October to mark the startup of a 100 kW solar array that powers the station's transmitter and related equipment.

The company believes this makes KEZW the largest radio station in the United States to be powered by the sun. It says its monthly energy costs have dropped by 80 percent.

The sun bathes solar panels being installed between snowstorms in early 2012.



What sets KEZW apart from other such installations is the scale of its operation.

"A lot of stations say they're powered by wind or solar," said Jeff Garrett, director of engineering for Entercom Denver. "But that usually means a part of the energy comes from renewables, or it is a low-powered station.

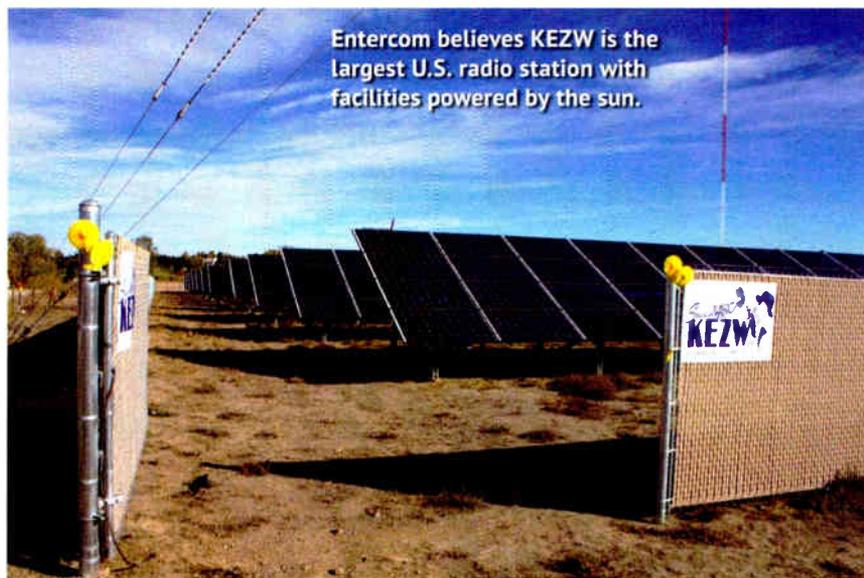
"Our solar array is able to power the transmitter site 100 percent on most days when there is sufficient sunlight."

Even in late October, the array was able to power the site fully. KEZW operates on 1430 kHz with 10 kW day and 5 kW night using a Nautel MD-10 transmitter driving a five-tower array.

COMMITMENT AND SPACE

A number of pieces need to fall into place in a project of this scale. Most important, according to Garrett, is a commitment from top management to get the job done.

"A lot of companies speak the words about going green, but Entercom's management has consistently backed energy saving programs that work." The company said the project is part of an envi-



ronmental initiative called IThing, as in "do one thing to improve the environment each day."

KEZW also was fortunate in having the necessary real estate. There was plenty of land at the transmitter for the 300-by-80-foot solar array.

Also important are federal and state tax incentives for renewables. "Everyone is in favor of renewable

energy, but they're also looking at the bottom line. Anything that drives down the upfront costs will make the project more attractive."

Ken Beck, vice president, technical operations and news, talk and sports programming for Entercom, said, "We were able to participate in a now-expired federal program which allowed certain facilities to qualify for a federal cash incentive instead of a tax credit. The state of Colorado also has a repurchase program through the local utility, which helped make this project work for us." He speculated that this financial landscape might change in the future because a lot of the incentive programs at the local and federal levels came under scrutiny during the so-called fiscal cliff discussions.

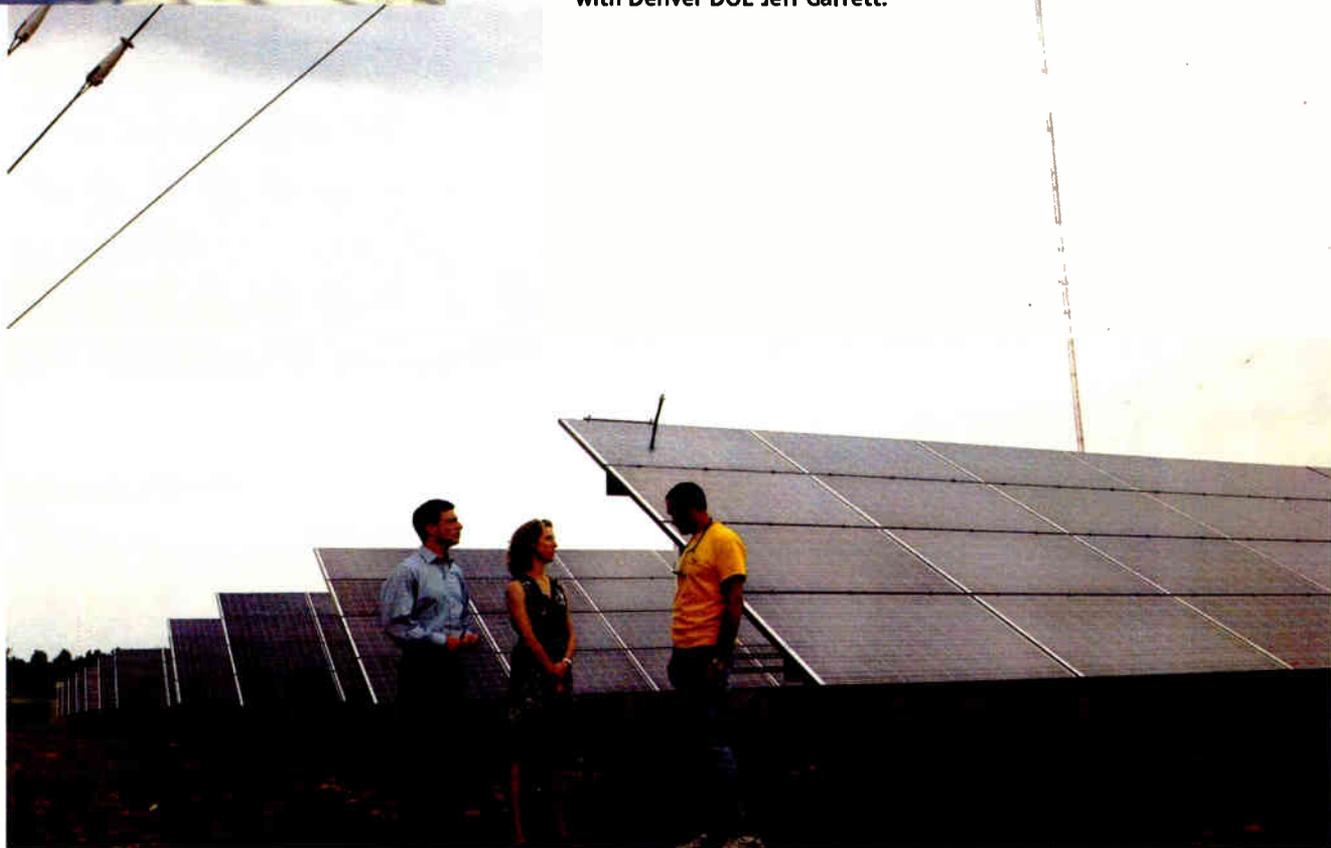
The station also needed to consult state laws. "The largest system we were allowed to build was 130 percent of our rated load," said Garrett. Such legislation prevents organizations from becoming independent power companies.

The solar project isn't the first energy conservation initiative at KEZW. Five years ago, the lamps in the five AM towers were replaced with LEDs.

"I had to rewind the toroids so we could get enough power to drive the remote control sensors," said Garrett. He adds that before the LED upgrade,

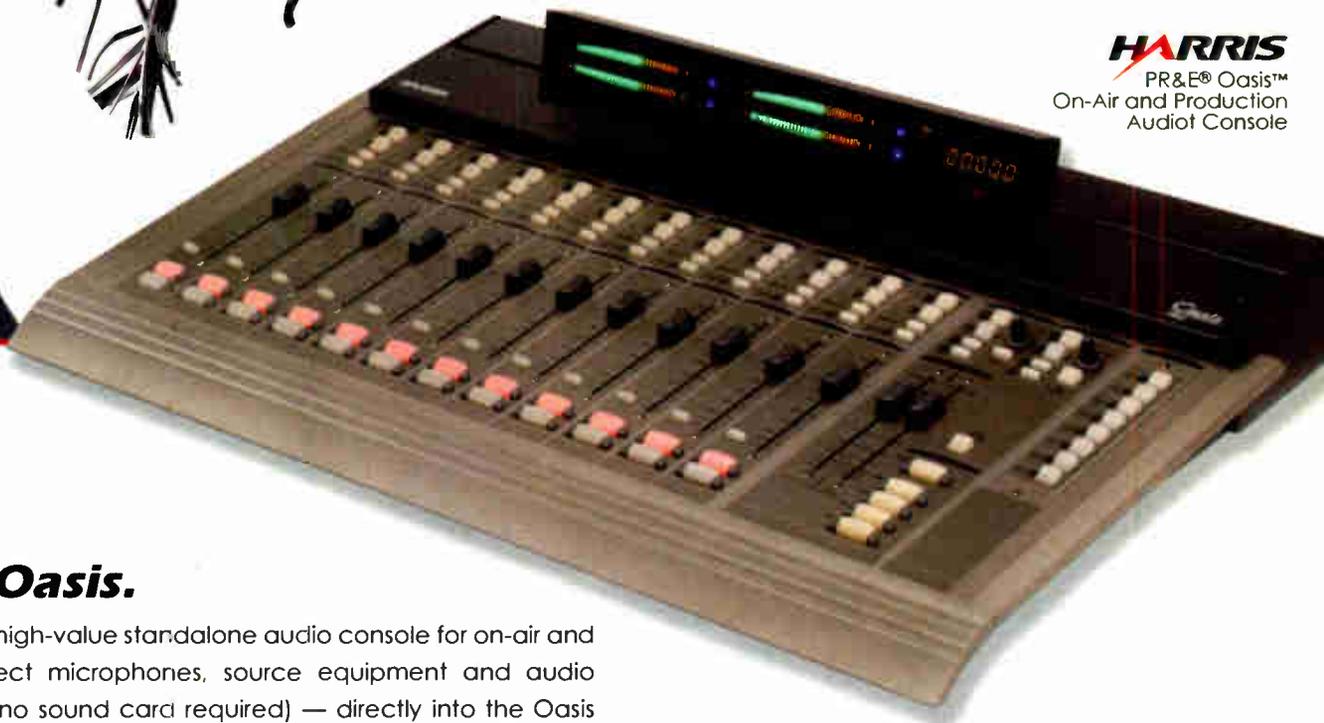
(continued on page 18)

Entercom CEO David Field and Director of Sustainability Jamie Field discuss the array project with Denver DOE Jeff Garrett.





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KEZW*(continued from page 16)*

the station used about 7 kW of power per year just to light the towers.

CONCERNS

Garrett had built a wind- and solar-powered facility at KFMU(FM) in Steamboat Springs, and while he was enthusiastic about this solar project, he had several concerns.

"I wasn't sure about storing the energy, and how batteries would work at the scale we were planning. Also,

the interactions between AM array and solar gear were a concern." How would a strong RF field affect the inverters? How would the solar-panel array influence the AM pattern?

Garrett and staff engineer Derek Jackson conducted some experiments and did the preliminary work. Inverters were delivered to the transmitter site and tested. They delivered a clean sine wave output, and didn't seem to be sensitive to RF. Before construction, the engineers did a partial proof so there were baseline measurements of the AM pattern. They consulted the site's blue-

prints and marked out ground radials and other buried cables so there would be no accidents while holes were being dug for pilings.

As plans progressed, they decided to forego battery power and simply feed the inverters directly into the grid. This meant the station would be on the grid during nighttime hours; but it also simplified the installation, allowing the power grid, emergency generator and solar array to work together harmoniously.

The utility company installed metering equipment at the site to track how



An unidentified technician from REC Solar installs inverters on the wall of the transmitter building.

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much power KEZW was contributing to the grid. The solar array generates 100 kW of power, and 85 kW are available from the inverters.

REC Solar of San Luis Obispo, Calif., was hired as the general contractor, and Hatfield & Dawson Consulting Engineers of Seattle were signed on to develop a plan to preserve the integrity of the AM pattern as the solar array was installed.

"Basically, we had to cadweld grounding pigtailed to everything and tie it all onto a copper strap that connected to the AM ground system," said Garrett. Some minor retuning of the AM array was necessary as construction trailers were on site. After work was completed, the site was retuned, and the settings matched the original numbers.

Another concern was the effect on the solar system of load switching from the 10 kW day to 5 kW night patterns, but that turned out not to be a problem.

Garrett and Jackson's testing, planning and hard work paid off.

"The solar system has worked perfectly from day one. The efficiency of the new inverters and solar cells is impressive. Many days we are generating more power than we are using."

The real payoff however is in the bottom line. "Last year our electric bills for the transmitter site were \$1,200–\$1,300 [monthly]. This year, for July and August, it dropped to \$270." And that's in addition to earlier power-bill savings from installing LED beacons.

Tom Vernon is a longtime contributor to Radio World. He wrote about graphics for radio in August 2012.

Has your station adopted notable "green" practices at your facility? Tell us about it at radioworld@nbmedia.com.

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Four CAT-6 cables and a low-cost switch that handles the gigabit speed WheatNet-IP runs at. Let's do the math - plug in eight connectors, power up a console and three BLADES, add your audio and you are ready to rock, roll and rule the radio world. Brilliant, you ask? Nah - just really, really intelligent.



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Two 8x2 stereo virtual Utility Mixers that can be used for a wide range of applications; for example, using Wheatstone's ACI Automation Control Interface, your automation system can control the mix for satellite or local insertion switching

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Front panel routing control - any system source to any destination on that BLADE

Front panel headphone jack with source select and level control - monitor any system source

Flexible GPI logic - 12 universal logic ports, programmable as inputs or outputs, routable throughout the entire system

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Assign any source of any type anywhere on your network to any fader. Each input channel can be assigned to four stereo busses, plus four pre/post-selectable aux sends, a stereo CUE bus, four mix-minuses and the panel's own bus-minus. Full Vorsis EQ and Dynamics let you sculpt and control your sound with the quality of

the finest dedicated outboard processors. The visually-stunning meter bridge features up to four sets of bright, high resolution LED meters, as well as circular LED displays for auxiliary send levels and pan control. A digital count-up/count-down timer is also included.

The LX-24 is advanced in ways that can make a HUGE difference in your capabilities. But it's also immediately familiar to anyone who has ever sat behind a board at a radio station. Use it to make your programming the best it can be. Just plug it into your WheatNet-IP Intelligent Network – with it, and the BLADES across the page, you can. dare we say it, rule the world.

THE LX-24 CONSOLE CONTROL SURFACE FEATURES

Low-profile table-top design - no cutout required

Meter bridge with up to four bright, high-res LED meter sets

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NRB Hopeful on Fundraising Change

Parshall: Convention will focus on 'regulatory environment' in Washington

BY CRAIG JOHNSTON

"Cautiously observant" is how Craig Parshall recalls the feelings of Christian broadcasters on the eve of Barack Obama's inauguration as president four years ago.

Fast forward to 2013, and Obama has begun his second term. Parshall, the senior vice president and general counsel of the National Religious Broadcasters, sees no reason to stop being "vigilant."

"The regulatory environment in Washington is one where the current administration seems to still have an appetite for more regulation than we would be happy with," he said in an interview with Radio World.

"We're feeling pretty much the same as we did four years ago. And an incumbent with a second term, that's always a different environment from the first term, for political reasons. And that's the case with anybody, whether it's President Bush or President Obama."

With the NRB's annual convention pending in early March, Parshall spoke with RW about issues he feels will be

prominent among Christian broadcasters at the event.

Fundraising — Parshall said NRB and its members are still waiting for FCC action to allow noncommercial educational stations to use up to 1 percent of their airtime to conduct fundraisers for third-party non-profit groups recognized under IRS code §501(c)(3).

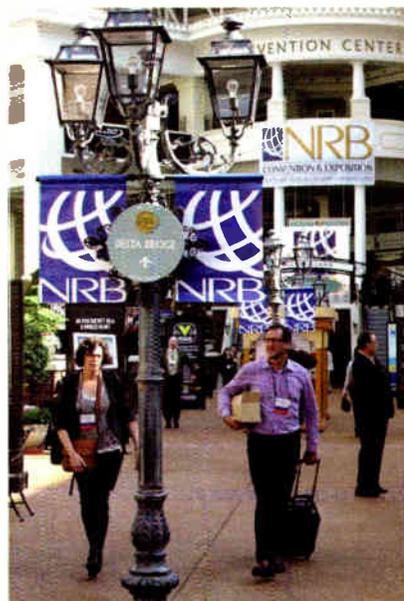
"It seems to be something that has wide support, very little opposition," said Parshall, "particularly in a bad economy, where noncoms really have to look for opportunities to partner with other non-profits, and to serve communities."

He thinks action has been delayed because the voluntary spectrum auction effort "has kind of gobbled up all the scenery on the stage, because it's so complicated." That auction affects television only, but Parshall said he thinks radio could eventually be affected, too.

Another television-only concern that he thinks may come to visit radio is the requirement for station political files to be posted on the Web, something NRB



Craig Parshall



The convention returns to the Gaylord Opryland Resort & Convention Center in Nashville.

fought against along with NAB.

The commission, he noted, "indicated in their proceeding that they're next going to look at radio, enforcing this rule against radio."

Charitable Deduction — The tax package that resulted from turn-of-the-year legislation to address the fiscal cliff did not include elimination of, or limitations on, charitable deductions on income tax.



IF YOU GO

What: NRB Convention & Exposition

Who: Christian communicators "from program producers to authors, pastors to engineers, directors to vendors"

Where: Gaylord Opryland Resort & Convention Center, Nashville, Tenn.

When: March 2-5

How: nrbconvention.org

How Much: \$550 members, \$650 non-members (full registration), \$250 expo only

But revising the rules for such deductions remains on the list of possible tax reform provisions put forward by some members of both parties.

Parshall said, "That was very disconcerting, because every study that's come out has [suggested] the same result: a devastating blow to non-profits, because people will give substantially less."

Religious Speech — When the Matthew Shepard and James Byrd Jr. Hate Crimes Prevention Act was passed in 2009, NRB became engaged in debate over what Parshall called the free speech implication of the statute.

He said language was added "specifying there had to be acts of violence, not just affronts to people's sensibilities that would trigger federal crime."

NRB insisted specific language allowing free speech was required. "Come right out and say, 'We have no intention of burdening religious speech.' We had to fight long and hard for that."

He said NRB is monitoring enforcement of the law, including a case where 16 members of an Ohio Amish sect were convicted last year under the act for forcibly cutting dissenting Amish men's beards and Amish women's hair.

"I don't agree with [the sect's] tactics. Certainly you don't grab people and shave their hair against their will." Though it has not intervened in the case at this time, NRB is among those expressing concern about the free speech implications of prosecuting it as a hate crime.

"Is there a burden on religion in the enforcement of this hate crimes law?" Parshall asked. "The court's particular reasoning in this case sets a bad precedent for future cases where religious citizens

(continued on page 24)

KGLE REACHES A 'MILESTONE'

KGLE(AM) will be among a record number of organizations receiving the NRB Milestone Award this year at the NRB 2013 Convention & Exposition.

The award is presented to Christian communicators who have demonstrated "exemplary service in the industry for five decades or more."

The station recently turned 50. Heard at 590 kHz, it is based in Glendive, Mont. It signed on as a commercial AM and was a part of the Christian Enterprise Network until the fall of 1992.

"Because of the economic downturn in Eastern Montana at that time," NRB wrote in its announcement, "the network felt it could no longer afford to operate the station and decided to either sell KGLE to a local listener group or allow it to 'go dark' at the end of that October if a local buyer was not found."

It said KGLE's listeners rescued the station, and the corporation Friends of Christian Radio formed and assumed ownership in early 1993. "Since that time, the Lord has blessed the efforts of FCR, and their listeners have faithfully supported the ministry with their prayers and gifts."

Shown in the photo are Frank Stella, Diane Odenbach, Ellen McBride, Cody Ross and Jim McBride.

Bott Radio Network, Ambassador Advertising Agency,



Evangelism Explosion International and Northwestern Media are among others to receive the Milestone honor.

A sampling of other award recipients:

- Radio Station of the Year — KVNE(FM), Tyler, Texas
- Radio Program of the Year — Moody Radio, "The OneCry Prayer Summit"
- Most Creative Online Initiative — Gospel for Asia
- Best Use of Social Media — Focus on the Family, "Today I Will"
- Best Broadcast Website — Salem Web Network, Godtube.com

For more information see nrbconvention.org.



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KPBS Completes Dual Upgrades

The San Diego station gets a new transmitter site and studio gear

BY SCOTT FYBUSH

Moving a high-powered FM transmitter site can be enough of a project to consume an engineering team's entire year. So can rebuilding an entire studio complex.

For the team at public broadcaster KPBS(FM) in San Diego, this past year brought both: a major upgrade to the studio core, and a new transmitter site with better coverage of their target audience.

When KPBS moved in 1994 into its current studio home, the Copley Telecommunications Center on the campus of licensee San Diego State University, it didn't have to look far to find the consoles it needed for its radio studios.

Pacific Recorders & Engineering was based just up the 5 Freeway in Carlsbad. Chairman Jack Williams, seeking a local facility where he could show clients the company's gear in action, donated boards for a studio complex that came to include a main air studio, a performance studio, a talk studio and control room, and a production suite.

Other equipment came over from the cramped studios KPBS radio and TV had occupied elsewhere on the SDSU campus; and some studio furniture was donated by local commercial broadcasters.

The result was a neat line of studios arrayed along both sides of a hallway on the first floor of the KPBS building, and it served the station well for almost two decades.

HELP FROM PTFP

By the early 21st century, KPBS Director of Engineering and IT Leon Messenie says a change was needed. "The boards were getting harder and harder to keep running." And in a facility that was spreading out, there was no good way to move audio around the plant. "We didn't have a routing switcher. Just distribution amps and selectors."

Messenie says the goal was to bring KPBS' studios into the digital world on a tight budget of \$225,000. For most of the studios, including the main on-air

studio, that meant replacing the old PR&E consoles but leaving most of the furniture and outboard gear intact.

(There was another big reason to keep the furniture in place: Those 1990s-era studios were large spaces even when they were built, and Messenie says the heavy wood-and-formica studio furniture, complete with turrets hanging over the operator positions, helped to keep the rooms from feeling too cavernous.)

Working through PTFP, the now-defunct Public Telecommunications Facilities Program, KPBS secured a matching grant to cover half the cost of replacing the consoles in three of its studios.

While the process required KPBS to use the lowest bidder, Messenie says he was pleased with the outcome. That bid came from Harris, which had acquired PR&E along the way.

"There still is a lot of good blood between us, and the PR&E engineering team is still just up the road in Carlsbad," Messenie says.

The three rebuilt studios all received the same new 20-channel Harris RMXdigital consoles, as well as new AirTools 2X dual-channel voice processors from BSW. Behind the scenes, KPBS also installed a new Harris routing and distribution network.

That network proved to be a vital part of the station's reconstruction, when most of the radio studio operations were moved upstairs to a tiny temporary studio built in a room just off the KPBS newsroom. (Unlike most public broadcasters, KPBS produces daily news content for both radio and television, and it had just finished building out its new open-plan newsroom before embarking on the radio project downstairs.)

With a tight deadline to complete the project to meet the terms of the grant, Messenie and his team had to move quickly. Following the buildout of the temporary studio upstairs in January 2012, KPBS all but vacated its downstairs studios, giving the Harris/PR&E team "the run of the place" as they worked to get the new studios up and running by late spring.

(continued on page 26)



The eight-bay 'Quadzilla' antenna is mounted at lower right on the KFMB(TV) tower on Mount Soledad. Above it are main and backup antennas for KFMB(TV) and the four-bay backup antenna that kept the 'Quadzilla' stations on the air during the antenna replacement.

NRB

(continued from page 22)

citizens are faced with 'hate crime' prosecutions."

He continued, "There's the proper legal analysis when it comes to religious groups doing things that are motivated by religion, even if they're criminal," he said. "We're not arguing with the result that they were found guilty. We're arguing that the court did not, from what we can see, apply the right legal standards to protect religious liberty rights of everyone."

New Media — Parshall chuckled when he began to discuss religious broadcasting and new media.

"First of all, the new media is no longer new. It is entrenched in everybody's life. It's not either traditional media, over the air, and then the new media. Every radio and television station has a Web presence, and live streaming."

As an example of the continuing convergence, he pointed to the hoped-for expansion of FM reception capability in cellphones, which would help FM broadcasters of all formats. "So it's no longer a one or the other, either this or that."

Future of Media — The FCC's Future of Media project was a hot-button issue for NRB over the past several years. However, according to Parshall, "We thought the Future of Media report that finally got issued [in 2011] was very measured, and actually was handy.

"In fact, I've gone back to that report several times, to use it as a general overview of the state of the media, both traditional and digital, and just kind of sum up where we've been, where we are, and maybe places that we ought to go."

Internet Speech — Last fall Parshall proposed a "Free Speech Charter for the Internet."

He called it "a charter of rights that we feel new media companies such as Apple, Google and Facebook should consider adopting, to ensure the free speech rights and religious liberty rights of their users." NRB has said that the control over communications that can be brought to bear by a few media giants represents a "breathtaking" threat to freedom of discourse if those companies happen to disagree with what others are saying.

At the time of its release, NRB cited incidents such as the Chick-fil-A protests, wherein NRB felt that certain positions were discriminated against by some Internet media companies.

"Basically we said: 'Just follow the First Amendment,'" Parshall summarized. He's said he's hoping that powerful new media companies will opt to "self-regulate."

Other Issues — Regarding content costs, Parshall said he keeps hearing from organization members that "our royalty fees are too high. We're having a hard time paying all of them." It is an issue he stated he believes will not go away any time soon. On low-power FM, he said it's too soon to determine the impact on NRB members of the expected new LPFM filing period. But, he said, "There's a world of difference between the opportunity that the [FCC] intends to create, and how it filters down to our people." And regarding HD Radio, he said the format overall "has just not caught on" with many of the organization's members.

Craig Johnston is a frequent contributor to Radio World and other NewBay Media publications.

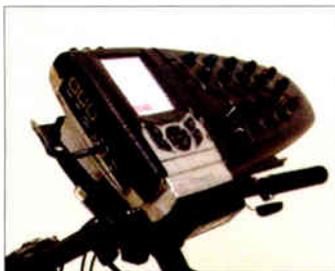




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Dan Jackson, engineer for 92.9 FM in Perth, Australia was faced with a unique challenge. Breakfast hosts Paul Hogan and Lisa Fernandez would be cycling for hours in strong winds and pouring rain as part of the 92.9 Kids Appeal for Telethon.

The unique solution was to equip Dan's bike as a mobile production facility. The talent wore wireless mics AND in-the-ear monitors which communicated with receivers and transmitters in a rack bag on Dan's bike.



on-air feed as the trio traversed the winding roads of

Perth. How did it all work out? Absolutely flawlessly – the show went on without as much as a speed bump!

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KPBS

(continued from page 24)

ON TO SOLEDAD

No sooner had the KPBS radio staff returned to its regular studios and their new equipment than Messenie and Maintenance Manager Scott Stinson were plunged into their second big project of the year.

For decades, KPBS radio and TV had shared a transmitter site atop Mount San Miguel, at nearly 2,500 feet above sea level and some 10 miles southeast of downtown San Diego.

That location was a mixed blessing for KPBS: With just 2,700 watts effective radiated power at 1,800 feet above average terrain, the station enjoyed superior coverage of downtown and the eastern San Diego suburbs, as well as a healthy reach over the Mexican border



Top: KPBS(FM) control rooms, like this one shown after renovation, combine 1990s-era studio furniture with new Harris consoles. **Left:** One remaining studio features the original Pacific Recorders equipment from the station's 1990s-era buildout.

just a few miles to the south. Much of the market's growth, however, had moved instead to the north along the coast; and the rugged coastal terrain blocked KPBS from providing a clean signal into affluent areas such as La Jolla and Del Mar.

From the time Messenie joined KPBS in 1981, he says plans were afoot to move the Class B 89.5 MHz signal to Mount Soledad, a lower peak (just 765 feet above sea level) that had the advantage of a clean line of sight up and down most of the coast. Over the years, many of San Diego's FM stations had migrated to Soledad, but KPBS had long been thwarted from joining them

because of spacing issues to an analog Channel 6 signal, XETV in adjacent Tijuana, Mexico.

The shift to digital TV finally opened up a new window for KPBS to move. Another San Diego noncommercial station that had fought against XETV for a power upgrade, KSDS(FM) on 88.3, won a ruling from the FCC that the Mexican Channel 6 operation no longer needed to be protected on U.S. soil, and Messenie says once KSDS had permission for its upgrade, "the floodgates opened" at the FCC and KPBS was clear to relocate.

While KPBS had earlier investigated the possibility of building its own tower on Mount Soledad, the ensuing years had brought cooperation with one of the mountain's oldest tower owners, Midwest Television's KFMB(TV).

In 2000, KFMB constructed a new master FM facility on its 285-foot Soledad tower, initially with the intention of having KPBS as one of the tenants. When KPBS found itself unable to move, KFMB instead found other commercial tenants higher on the dial, building its eight-bay Dielectric master antenna —

affectionately nicknamed Quadzilla — to cover a range of frequencies from 94.9 to 100.7.

For KPBS to join the "Quadzilla" family meant a full antenna replacement, and the public broadcaster shouldered the cost of having Dielectric build a second version of the mammoth antenna that could handle frequencies from KPBS' 89.5 up to KFMB(FM)'s 100.7.

Before contractors from Wireless Infrastructure could take down the original "Quadzilla" and mounted its replacement, KPBS had to provide a temporary backup antenna as well, moving KFMB(FM) and its two tenants, Lincoln Financial Media's KBZT(FM) and KIFM, to the four-bay auxiliary during construction.

The KPBS move meant much higher power than the station had used on Mount San Miguel: Instead of a 2.7 kW ERP from its old site, KPBS now runs 25.7 kW ERP from Soledad. That meant a new transmitter to make 9.4 kW of output power, and KPBS turned to Nautel for a new NV20 for the new site. The old Harris Z-Series transmitter on Miguel remains in place; since KPBS(TV) still uses the site, the FM station is keeping an auxiliary facility there.

A Moseley 950 MHz Starlink STL connects the KPBS studios to the new Soledad site, carrying audio and data for both KPBS' main audio service and its HD2/HD3 subchannels. From Soledad, KPBS is now running HD Radio at -14 dBc. Messenie says the higher digital power level has helped HD coverage, though it has required some cooperation

with a fellow public broadcaster to the north, adjacent-channel KPCC (89.3) in Pasadena, to alleviate some interference into KPCC's coverage of Orange County.

Since the new Soledad site went on the air Oct. 1, completing the \$1.2 million relocation project, Messenie says it's performed just as expected.

"From Mission Valley going north, there has been a great improvement," he says. While the new site has improved coverage along the coast, it's still blocked by rugged terrain from reaching some areas, including the 78 Freeway corridor heading inland from San Diego's northernmost suburbs.

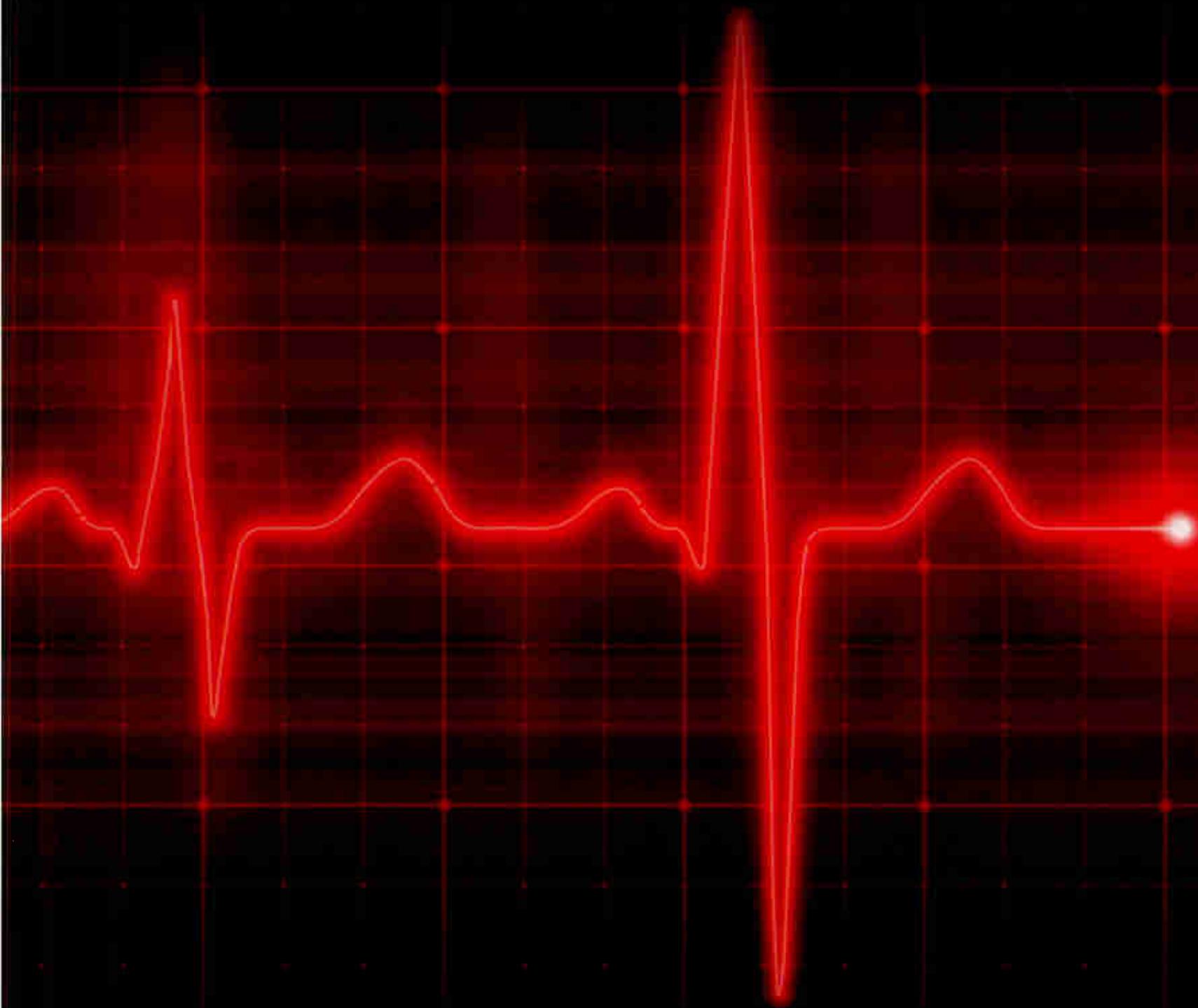
The East County area that used to receive the strongest signals from Mount San Miguel no longer hears KPBS as well as it once did, and Messenie says he's hoping to find a way to restore stronger service there, perhaps by repurposing a small translator on 89.1 that KPBS had been using to fill a coverage gap in La Jolla that's now blanketed by the new Soledad signal.

With new studios and a new transmitter now in place, the next project on the agenda will be upstairs, in the space where the temporary radio studios were built last year. KPBS hopes to build out that room in a more permanent fashion as an additional radio news studio, allowing its newscasters to do more of their studio work right next to their office space.

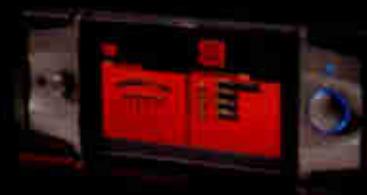
Scott Fybus is a longtime contributor. He wrote in the Jan. 16 issue about the Santa Catalina site that KBRT(AM) is leaving.



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Omnia

It's Built 'Tieline Tough'

POTS or IP, South Dakota cluster relies on Tieline codecs for remotes

USERREPORT

BY GARY PETERSON
Former Chief Engineer
New Rushmore Radio, Inc.

RAPID CITY, S.D. — I work for New Rushmore Radio, which owns and operates six radio stations in the Black Hills of western South Dakota. The New Rushmore Radio group evolved to its present size over a period of several years as a result of changes in FCC ownership limits and subsequent acquisitions. I was chief engineer at one of the ancestor radio stations in 1966 and followed through in the same capacity during this period of expansion until semi-retirement last July. Radio engineering remains in my blood and I continue to work for the group part-time.

With regard to broadcasting audio using remote codecs, I have seen the transition from POTS and GSM wireless transports, to the use of IP using 3G and more recently 4G LTE cellular wireless networks. To my knowledge, ISDN services have never been readily available or used in our area.

COMMANDER

When I heard about Tieline codecs I asked around to see how they performed and heard very good reports. We purchased the first POTS-enabled Commander G3 field and rackmount codecs for KFXS(FM) 100.3 The Fox in 2008, in order to carry play-by-play ice hockey remotes.

In 2012 we purchased a pair of codecs for KKLS(AM) The Hills 97.5 FM in order to do play-by-play baseball, football and basketball remotes. We are

in the process of transitioning from a legacy POTS dial-up interface to the Tieline system, which will be configured for unattended sports remotes.

We have had a lot of success broadcasting ice hockey for hundreds of hours from venues up to 1,000 miles away using POTS lines because these lines have always been available at the sports venues. The Tielines provide studio-quality audio over POTS that is highly superior to analog POTS systems using voice couplers or studio hybrids. The POTS connections are stable and reliable over long time periods and our on-air announcers love the Tieline codecs for their ease of use. The return audio path is used to communicate with announcers and give cues to anyone doing any type of remote broadcast.

When we bought the first pair of codecs, the program directors at our other stations in the group heard the audio and recognized their potential for performing high-quality remotes. They would often request to borrow them for nonsports remotes when they weren't in use for play-by-play broadcasting.

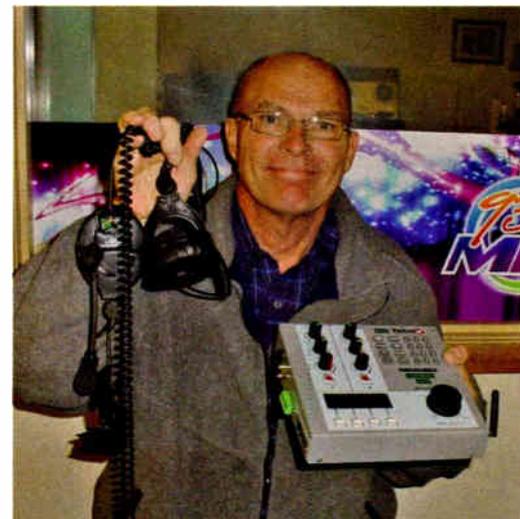
Due to the demand for the Tieline units, we purchased another pair of Commander field and rack codecs and an annual purchase was made until now each station has its own set. All codecs are fitted for POTS and four of the six field units are fitted with wireless 3G modules.

Today, around 50 percent of our remote broadcast time would involve play-by-play sports and the rest would include a mix of commercial sponsorship, charity and public service related broadcasts. Due to the rollout of 4G LTE cellular networks and the congestion we sometimes experience over 3G connections, we recently purchased two Tieline 4G LTE USB modules. This allows us to connect using Verizon 4G LTE modems and has been a welcome addition to our broadcast arsenal. Over time, I foresee the purchase of more 4G-capable USB modules to increase our wireless remote capability.

Whenever possible, we test venues in advance and we know that 3G and 4G will work most of the time within the immediate area. Cellular coverage can be marginal at times, however, particularly at large events where a large

number of people are using data and in some terrain-challenged areas. We normally use POTS if it's available in those situations.

The Commander field codecs certainly are tough. This year we experienced an unfortunate incident during a remote broadcast when a lady lost control of a rental car she was driving and crashed into our table outside a local restaurant from which we were broadcasting. The remote gear was on the table and went flying. Unfortunately our announcer suffered a broken wrist



Gary Peterson writes, 'Program directors at our other stations in the group heard the audio and recognized their potential for performing high-quality remotes.'

and ended up in the hospital. As for the equipment, a set of headphones was totally destroyed, but apart from a scratch or two, the Tieline codec hasn't missed a beat.

Another notable event where the Tielines made their mark was the annual Sturgis Motorcycle Rally. This is a massive event where up to 300,000 people from around the nation converge for races, bike shows, vendor exhibits and outdoor concerts. We broadcast throughout the week-long event and the flexibility of the codecs allows us to go live from a variety of locations. We mainly use POTS because cellular data availability can be unreliable with so many people using data services.

Since we first bought the Tieline codecs we have done hundreds of remotes and they have proven their worth in the field many times over. Their robustness and reliability on the road is well-established and they will continue to play a major role in delivering our radio group's programming from a variety of locations.

For information, contact Tieline in Indiana at (317) 845-8000 or visit www.tieline.com.

TECHUPDATE

TELOS Z/IP ONE AIMS FOR IP SIMPLICITY

Telos Systems says its Z/IP One is an affordable 1 RU IP codec designed to help users get the best quality from public IP networks and mobile phone data services, including connections behind NATs and firewalls.

According to the company, its Agile Connection Technology adapts to the IP network, minimizing effects of packet loss and jitter to deliver reliable audio despite varying network conditions, without the need for user intervention.

It adds that Telos' free Z/IP Server service helps traverse corporate firewalls



and NAT layers. The user selects a target Z/IP from the onscreen list and press "connect." Setup can be performed with a connected PC or from the front-panel controls.

Z/IP One offers a choice of codecs: HE-AAC, AAC-LD, MPEG Layer II, MPEG 4 AAC LC, MPEG II AAC LC, G.711, G.722 and PCM, plus a new codec, based on Advanced Audio Coding — Enhanced Low Delay (AAC-ELD), that, according to Telos, delivers excellent fidelity at low bitrates with nearly inaudible loss concealment and minimal delay. Z/IP One conforms to EBU N/ACIP open standards for interoperability, and supports SIP 2.0 for connection to a variety of VoIP devices.

Z/IP One has standard analog I/O plus Axia Audio Livewire for one-cable connection to Axia networks. It can connect wirelessly via EVDO, UMTS and Wi-Fi. An RS-232 channel and an 8-bit parallel GPIO port round out its remote toolbox.

Recently-released v1.5.0r software includes support for IPv6, SNMP, automatic redial options, enhanced Wi-Fi monitoring tools and a "Router Mode" that allows Z/IP One to act as a router between the LAN and WAN interfaces — suitable for connecting laptops or other networked gear when only one IP connection is available.

For information, contact Telos Systems in Ohio at (216) 241-7225 or visit www.telos-systems.com.



Simian Gateway

Remote Control for Simian 2.2 **PRO** Radio Automation

Broadcast Software International



Simian Remote is available for PC, iPhone, and iPad

Simian Gateway opens a portal into your Simian 2.2 **PRO** Radio Automation, enabling real-time remote control and advanced Remote Voice Track creation over the internet.

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The Simian Gateway offers a TCP/IP portal into your Simian 2.2 Pro automation system so that Simian Remote for PC and Simian Remote for iPad can connect to your automation system. The Simian Gateway manages up to ten connections from Simian Remote clients to a single Simian 2.2 Pro On-Air or Production installation over your local area network or across the internet. Each person in a multi-talent program can have their own interface!

Full Featured Remote Voice Tracking

With Simian Gateway and Simian Remote clients, you now have the ability to create and insert voice tracks remotely! We aren't talking a simple insertion of a recorded audio file. Simian Remote's advanced voice track editor can download intro and segue cuts that the Simian Gateway creates for the songs surrounding your voice track so that you can fully preview and set cross-over points for your voice track!

Cost Effective

Simian Gateway comes at a very affordable add-on price to Simian 2.2 Pro. Contact BSI Sales for pricing information.

Simian Remote clients are completely free. All you need is the Simian Gateway and you can install and run a Simian Remote client on as many devices as you wish. There are Simian Remote client versions for both Windows PC and iPad.



Simian Gateway runs alongside Simian 2.2 **PRO** to manage TCP/IP communications between Simian Remote clients & Simian 2.2 **PRO**.

For More Information Call: 1-888-BSI-USA-1 ~ Email: sales@bsiusa.com ~ Web: www.bsiusa.com

Comrex Access Works Everywhere

Rack and Portable units pair up for solid POTS or IP connections

USERREPORT

BY DOUGLAS LANE
Sports Technical Director
Remote Specialist
Entercom Boston

BOSTON — The Comrex Access Rack and Portable are some of the most useful pieces of equipment in my remote kit.

There is a learning curve that needs to be addressed when setting up and using any IP codecs. However, once you get over this hurdle, you will never leave home without one.

SETTING UP

Setup of a Comrex Access Rack in a permanent location should be planned carefully; the Internet connection to your station is not something to be taken lightly.

Your station's Access Rack needs a static IP address; by default it uses port 9000 for that. On initial setup the unit will need a keyboard, mouse and monitor. After it is configured you can control the unit from any computer with a browser. Make sure you note both the inside and outside IP address of the Access Rack, this way you can monitor the status of the unit from anywhere an Internet connection is available.

At our Entercom Boston cluster we have three Access Racks, each with its own static IP. Some other stations use one static IP for all their Rack Access, then use different ports (9000, 9001, 9002, etc.) to address them. [Editor's note: Comrex says it offers its BRIC Traversal Server which allows for easy connections, without the need for a

static IP address, even when devices are on a NAT Router or behind most firewalls.]

When it comes to the Comrex Portable, before leaving the station, program the unit with your station's Rack settings. This can be done with the small stylus provided, but is much easier if you address the unit via a browser on the same network. The manual will walk you through this procedure.

Once that is done, test it. Connect to a network outside of the station. The Portable can use 3G, 4G, USB, POTS or Ethernet to access the Internet. I recommend trying with a 4G MiFi (a mobile Wi-Fi hotspot) card and Ethernet. Use the "Network" pull-down menu to view the network options. Additional information is in the well-written manual. Once you have an IPv4 number go to the "Remotes" pull-down menu and try to connect to your station. Once you have proven the connection. Enjoy.

We've used our Access system for a number of missions: drop-in, man-on-the-street interviews or quick hits, mostly with 4G cards; long remotes where ISDN is not available or cost-prohibitive; back-up for all remote broadcasts; STL emergency backup; feeding the PA at a remote; communication with a studio host during ISDN remotes; post-game player interviews; remotes where ISDN is impossible.

Recently for WAAF(FM) we did two simultaneous remotes from baskets 100 feet in the air for more than 60 hours without a dropout (see photo); created an additional path from stadiums (we use ours



'Follow the wire.' Comrex codecs made this on-air studio-in-the-sky remote possible.

to connect to interview rooms); and as a connection for makeshift home studios during a winter weather emergency. This allowed our host to broadcast from home.

LESSONS

There are some things I've learned that will help in the use of the Access team.

Have a switchable IFB or mixer in front of the Rack unit. This provides much better flexibility.

Test the remote site ahead of time because 4G and 3G can be spotty — some car dealers, clubs, hotels, restaurants and bars have better Internet than others. I like to test using a computer with *speedtest.net* and the Portable Unit. I like a 5 Mbps up and down when testing with *speedtest.net*.

The best area to monitor the connection is on the Portable's Peer Stats screen. Use the numeric setting. That allows you to check the delay times and frame losses.

If your delay time has climbed, don't be afraid to disconnect and reconnect. It only takes a split second and can be done on the fly, even during a phone call.

MiFi and Wi-Fi at pro sports events is a bad idea. Once the crowd of reporters and fans shows up, the Wi-Fi speed crashes. It pays to get an Ethernet connection.

Play around with the codec settings. I like the various AAC settings, great quality for low band usage. You can even customize codec pairs; transmit in high-quality, receive in low quality.

Carry a small Ethernet switch in your remote kit. You can't always run cable to a router or modem. Use the switch to "steal" the Internet from a nearby computer. Ask permission first.

Buy a second battery for the Portable. If you are doing a long man-on-the-street segment, you will need it.

I have found no flaws with these Comrex units. They even have a stripped-down version called the BRIC-Link that is rack-mountable, uses minimal connections and is best used for nailed-up circuits. These units are about the same cost as an ISDN pair. It is a significant investment but well worth it.

For information, contact Chris Crump at Comrex in Massachusetts at (978) 784-1776 or visit www.comrex.com.

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TECHUPDATE

VODDIO BRINGS DIGITAL ENG TO THE FIELD

Voddio is a multitrack audio and video editor from VeriCorder Technology, designed for the mobile journalist.

It offers four-track multitrack audio editing on the iPhone and six tracks on the iPad. Detailed audio waveforms are displayed for audio editing. Volume curve controls to let users add audio fades and voice ducking.

Included is a script writer, so users can include text stories with audio. The app is now native to both the iPhone and iPad.

Voddio says it solves the problem of how to send large audio production files from a device, through its integration with VeriCorder's VeriSend upload and forward service. VeriSend provides a resumable upload manager that uploads a file into a user account folder on the company's server and forwards it to a chosen destination.

For commercial users who have subscribed to one of VeriCorder's network services, the file can be delivered into a website or media management system, along with necessary metadata, in the format required. Users can record, edit and send audio stories and productions directly from the field with an iPhone or iPad to a website, media management system or individual, over the Internet, through any Wi-Fi or cellular network.

For information, contact VeriCorder in British Columbia at (250) 448-4954 or visit www.vericorder.com.



AEQ Phoenix Pair Sail Away in St. Maarten

Island 92 uses codec hardware and software to deliver the story from the beach and at sea

USERREPORT

BY JEFFREY SOCHRIN
Managing Director
Island 92

SIMPSON BAY, ST. MAARTEN ISLAND — Island 92, actually 91.9 FM, is a 10-year-old radio station on St. Maarten Island in the Dutch Caribbean.

We use an AEQ Bravo console as our on-air board. When our station went shopping for IP-based outside broadcast gear, we contacted AEQ Broadcast



Jeffrey Sochrin on the beach live. The microphone feeds the Phoenix Pocket codec on an iPhone. The iPad is being used to control the station's BSI Simian automation system remotely.

International Inc. in Miami to see what they could offer. A couple of items we settled on were a Phoenix Studio IP codec for the studio and the Phoenix Pocket App for iPhone for Island 92's remote kit.

LITTLE BROTHER

The Phoenix Studio is an IP audio codec, in a single 1 RU rack-mountable case, with analog and digital stereo inputs and outputs and universal power supply (90–250V AC). The Phoenix also has two slots for inserting optional communication modules: ISDN, X.21, V.35 and GSM. Indeed, the modular approach of the Phoenix means that modules can be easily connected, depending upon customer preferences and available telecommunication infrastructures. The Phoenix, in addition to the main program and return paths, can simultaneously provide a backup circuit (or coordination) utilizing optional communication modules.

The little brother, the Phoenix

Pocket allows you to establish a high-quality bidirectional connection between your studio-based Phoenix audio codec and an iPhone, either through the 3G mobile network or a Wi-Fi access point. This is the way that Island 92 is using the application on a daily basis. Our reporters and talent in the field are able to transmit live interviews and shows from locations outside the studio or have others participate live in programs from wherever they are — all requiring only an iPhone and an Internet/wireless connection. The connection between the Phoenix Pocket and the Phoenix Studio is established over the Internet and through the services of the AEQ SIP server that AEQ provides to ensure easy connectivity for its customers.

Integrating the AEQ equipment into our radio station is one of the best things we have done. It allows us to transfer live broadcasts in and out of the studio seamlessly, without sacrificing sound quality or relay time.

The first big test came with the recent "Bathtub Derby" — a home-built cardboard boat race held for charity on Kim Sha Beach

for the Sister Regina Primary School here in St. Maarten. We were able to go live on the beach, live standing in the water and even live from a chase boat off the shore. We took our listeners to where the action was, in real-time. The broadcast worked.

Island 92 is also the official radio station for the upcoming 33rd Annual Heineken Regatta, the largest sailing race in the Caribbean. Quite frankly we just can't wait to follow the action live from the water, from racing boats, from vantage points high up in the cliffs and down on the beach with our Phoenix codecs.

AEQ has brought great versatility and value to our live action reporting ability. We look forward to continuing to take the AEQ equipment to the edge and bringing our listeners the best live reporting in the Caribbean.

For information, contact Giovanna Hurtado at AEQ Broadcast International in Florida at (800) 728-0536 or visit www.aeqbroadcast.com.

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A busy project engineer, what does Jeff like most?

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"I was happily surprised because it took me almost no time to get the Elenos up and running. Due to the clean, logical layout of the systems and wiring. It's an easy install - Roll the transmitter into place, and lock the wheels."

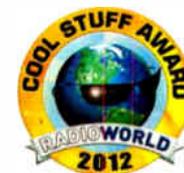
- Jeff Rosenberg
WBOQ - Boston

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TECHUPDATES

APT'S HORIZON NEXTGEN PERFORMS AT LONDON OLYMPICS

The WorldCast Horizon NextGen's is an IP remote codec. Manufacturer APT highlights its award-winning SureStream technology, which makes it possible to conduct duplex remotes over the public Internet with the quality and reliability of traditional ISDN.

According to the company, SureStream delivers consistently high audio quality and low delay over



open Internet links such as ADSL, LAN, WAN, cable, 3G and 4G wireless, even Wi-Fi. When used in conjunction with Enhanced apt-X coding, SureStream can maintain a consistent delay of 200 ms (400 ms roundtrip), suitable for those dealing with talkback and handover applications. It was used in the coverage of the London Olympics for this reason, the company said.

The single-port use of SureStream protects the IP audio stream against lost data packets and mini-

mizes the incidence of drop-outs or glitches when running over a public Internet connection. While the likelihood of a total loss of connection during a remote may be small, there will be some mission-critical applications where the risk can't be tolerated. In that case, SureStream can be deployed on two separate links, using separate providers.

Horizon NextGen offers front-panel confidence monitoring with LED status, level meters and headphone monitoring. The unit has a Web GUI for configuration and remote monitoring and a phonebook and profile info for connectivity in the field.

For information, contact Tony Peterle at APT/WorldCast in Miami at (305) 249-3110 or visit www.aptcodex.com.

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SCOOPHONE HD WIDENS VOICE TRAFFIC

AETA's ScoopFone HD is a professional mobile codec designed for the needs of modern broadcasting. The company says it offers a significant audio quality increase to 7 kHz with the new HD Voice service while keeping available normal cellphone calls with 3.1 kHz quality.



HD Voice (G.722.2) delivers higher-quality voice transmissions by extending the frequency range of traditional or narrowband voice calls (300 Hz–3.4 kHz) out to wideband audio ranges (50 Hz–7 kHz).

AETA makes this technology available in a portable form for low-cost remotes and on-the-spot broadcasts from reporters.

The company adds that it also performs well in TV wireless coordination and any live long-distance communication where professional quality is needed.

ScoopFone HD features include an OLED display, a simple and friendly user interface, onboard mixing capability for the two inputs (mic and line), 48 V phantom power, two antenna ports for transmission diversity, two headphone jack sockets, a cough key, USB port and SIM card slot.

Three ScoopFones can fit into one rack space. It has an internal battery but also operates on six AA batteries.

For information, contact AETA in France at +33-141-361-200 or visit www.aeta-audio.com.

YAMAHA INTRODUCES MGP MIXERS

According to Yamaha its new MGP analog mixer line offers premium performance with sound quality and high-end features. The company promises D-PRE discrete Class A microphone preamps for warm low-frequency response and extended high frequency performance, along with exceptional phase accuracy that reduces distortion.



Onboard Xpressive EQ features low and high shelving on the mono inputs to reproduce analog warmth. Mono inputs have individually switchable 48 V phantom power for condenser microphones, a 26 dB pad that accepts a wide range of input levels and a switchable 100 Hz high-pass filter.

Mono channels are also equipped with a single-knob compressor that includes an LED indicator, a feature pioneered by Yamaha that it says helps tame unruly vocal issues. Two digital effects processors — REV-X and SPX — provide complex ambiance and rich reverb fields, offering flexibility to build effects and enhance sound quality.

On the back, combo jacks for the mono inputs accept 1/4-inch or XLR plugs, which saves space and keeps the panel less cluttered. An internal universal AC power supply allows for use worldwide.

The MGP mixers include a ducker function, which automatically lowers the level of background music to accommodate the voice of an announcer coming in on another channel.

Another function, the leveler, maintains a consistent sound volume even with sound sources of different mastered levels, eliminating the need to ride levels on the faders to maintain a consistent output level.

A digital connection on the front allows connection of an iPhone or iPod that provides charging as well as control of selected mixer functions along with audio.

The MGP mixers are rackmountable and constructed of rugged steel chassis.

For information, contact Yamaha in California at (714) 522-9011 or visit www.yamaha.com/proaudio.

JK AUDIO REMOTEMIX 3.5 HAS TOOLS FOR REMOTES

Designed as a replacement for the long-time favorite RemoteMix Sport, JK Audio's RemoteMix 3.5 offers more features and added flexibility at about the same price — starting with three low-noise XLR mic inputs, each with its own peak level indicator.

The RemoteMix 3.5 has three high-output headphone jacks with separate volume controls. This broadcast-quality field mixer connects to any POTS or IP codec, offering an easy way to bring additional talent to the broadcast. It includes a phone line hybrid and keypad, wired cell-phone interface, PBX/VoIP phone handset interface and a Bluetooth wireless interface to your cellphone. Users may choose multiple connections at the same time, offering additional backup and monitoring paths.

The included 3.5 mm four-conductor headset adapter cable connects the RemoteMix 3.5 to most iPhone and



Android smartphones, as well as tablets and notebooks. Users place a phone call back to the station or use a third-party codec app for improved voice quality. Users can take advantage of new cellphones offering wideband or HD Voice capability for 7 kHz voice within their network.

A stereo 3.5 mm line output jack allows recording of the broadcast, or recording of a phone interview, with the mic mix on one channel and the return path or caller's voice on the other. A 3.5 mm line input allows mixing recorded audio into the broadcast.

For information, contact JK Audio in Illinois at (815) 786-2929 or visit www.jkaudio.com.

NEW SPORTS POD FEATURES DUPLEX TALKBACK

In 2012 Henry Engineering introduced Talent Pod, a mic and headphone controller suitable for remote broadcasts as well as typical radio studios.

The Talent Pod let an announcer to turn his or her mic on and off, and create a personal headphone audio mix of local and return audio. Henry Engineering says that the Talent Pod solved several problems encountered in remote broadcasts, especially at sporting events.

Yet, the company said, users wanted a talkback output, so talent could talk off-air to a producer, and also a way to turn the mic on and off remotely.

Henry's Sports Pod will soon debut with these features. The Sports Pod will be similar to Talent Pod, with the same headphone audio-mix facilities and the ability to link several units via Cat-5 cable. But instead of two buttons for mic control, it will have three: mic on/off, cough and talkback.



The Sports Pod's mic on/off function also will be controllable remotely. Both the talent and a remotely located pushbutton can control the microphone.

Sports Pod's talkback system will let the talent to talk to a producer or engineer. Pushing the talkback button will mute mic audio from the main (on-air) output, and send it to an isolated talkback output.

The Sports Pod will be compatible with the Cat-5 protocol used for Talent Pods, MultiPhones and MiniPods, so all units can be "mixed and matched" in an integrated system.

Sports Pod will be available in March.

For information, contact Henry Engineering in California at (562) 493-3589 or visit www.henryeng.com.

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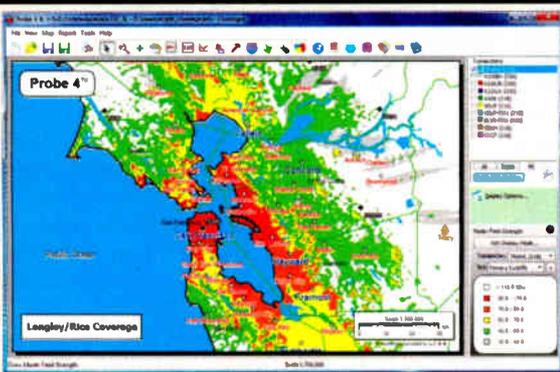
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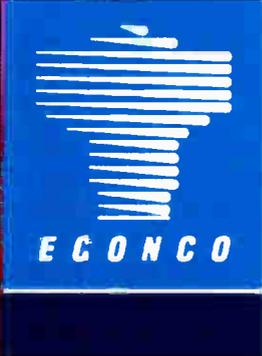
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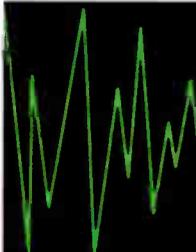
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OPINION

READER'S FORUM

WHO, EXACTLY, IS A 'FIRST INFORMER'?

Regarding the Jan. 16 column "First Informer' Concept Spreads":

One question I have is whether the Illinois bill refers to news and operations personnel, or only to engineers and technical personnel.

In Wisconsin, we were very careful to make sure that only engineers and technical people were allowed to carry the ID that would allow you to cross police lines. We did not want this to be a way for reporters to get to a disaster site before anyone else.

Kevin K. Ruppert
Engineering Maintenance Supervisor
WISC(TV)
Madison, Wis.

Radio World submitted the above question to Dennis Lyle, president/CEO of the Illinois Broadcasters Association. He replies:

We discussed this very concern with all parties involved when crafting the legislation and purposely left open the opportunity for key in-station/on-air personnel to qualify for emergency credentials.

We wanted to make sure that first responders understood that while engineers and techs need access to our stations and transmitter sites to keep the station on the air, stations will also need a limited number of on-air and in-studio personnel to have access to the stations for the

purpose of keeping essential programming on the air, disseminating information from (not to) the station's studios.

Therefore, it's conceivable that management will have select "on-air" and/or "in-studio" operational personnel completing (and thus qualifying for) the necessary National Incident Management System training so that they too will be credentialed in the event the station's physical facilities lie within the emergency and/or disaster area sanctioned off by first responders.

Remember, the credential assumes the station or transmitter is located within the disaster site, and/or that a disaster site stands in the way of accessing (or fuel being delivered to) the station or transmitter. NIMS training will educate the engineer, tech or studio personnel needed to produce "on-air" programming about the dangers they may encounter while attempting to access the station's facilities. Emergency disaster procedures already routinely in place by law enforcement in Illinois, added to a self-imposed (and commonsense) discipline and respect for the credentialing process, should eliminate any concerns regarding abuse of Illinois' credentialing process.

Bottom line: Illinois' credentialing program is to get key employees to the station, not to "the story."

Dennis Lyle
President & CEO
Illinois Broadcasters Association
Carterville, Ill.

LET'S MAKE LPFM ARGUMENTS CONSISTENT WITH PRACTICE

In his commentary "Why WTCJ(AM) Asked for a Waiver" (Dec. 19), Bud Walters didn't mention the three FM frequencies he owns licensed originally to communities like Tell City, Ind., along with the adjoining communities of Cannelton, Ind., and Hawesville, Ky.

All three have moved their signals as well as operations to better serve Owensboro, Ky., a larger city 25 miles away.

Two signals changed their community of license to accommodate the new coverage area. The call letters of one of those three FM frequencies is WTCJ(FM).

Also, Mr. Walters talks about AM revitalization, which is interesting.

Each station was successful in its day, serving the community while producing cash flow, with good audio and a more-than-adequate coverage area. But both stations these days operate like a travelers' information station and have for many years with limited coverage and poor audio.

It was decided a little more than 10 years ago that LPFM existence was restricted for non-commercial use, among other annoying rules, on the grounds of spectrum integrity, but was more of an effort to keep out unnecessary competition.

It is ironic that the very people who were so against commercial LPFM back then are now demanding the rules be changed so that these translators are created, thus destroying spectrum integrity.

Rob Calhoun
Freelance Voiceover Talent
Evansville, Ind.

'First Informer' Concept Spreads

In Illinois, broadcasters soon will have the benefit of emergency credentials.

When I first heard broadcasters describing themselves as "first informers," I was uneasy. While acknowledging the truth of the phrase, I felt we were taking a term, "first responders," that is highly valued in our society, and trying to catch some of its reflected glory. I am worried about how law enforcement and other partners in radio and TV would view broadcasting's use of those words. Over the years, I've come to see how stations that take their public service roles seriously. A recent news item out of Illinois is a reminder that as long as broadcasters handle this correctly, there's little cause for concern.

The Illinois Broadcasters Association reports that a "First Informer Broadcasters Act" passed by the legislature unanimously and was headed to the governor's desk. The bill ensures that broadcasters and cable operators will have emergency credentials to gain access to their operations. It also recognizes that broadcasters need access to deliver fuel for emergency generators in time of disaster.

As Radio World readers know this is not the first such effort. Dennis Lyle, president/CEO of the IBA, told me that then Chairman John Chubbuck pushed for this because he knew about Wisconsin's credentialing program, coordinated by the Wisconsin Broadcasters Association, and thought it

important for Illinois to have a similar program. IBA also was following which lobbied not only for a credentialing program but to have it codified into state law. That happened in 2009.

"Chris [Chubbuck] learned of Nevada's successful effort in securing emergency credentials for its broadcasters. IBA also was following which lobbied not only for a credentialing program but to have it codified into state law. That happened in 2009.

credentialed of a registered emergency credentialing program for broadcasters, the decision was made to pursue a creative process here in Illinois. Also playing a role were "the growing number of horror stories of broadcast-related access issues during times of emergencies and disasters of the past."

To my knowledge, and assuming the governor signs it, Illinois will thus be only the second state with "first responder" legislation.

FEW CONCERNS
What feedback from the law enforcement community did the association hear?

They were very supportive. Lyle said, "In all honesty, the only real concern was whether or not we [wanted to] put be placed on our station vehicles. The answer, of course, was no. We simply want to make sure we have every opportunity to keep our stations on the air. As in terminology, "The subject came up ever so briefly in early discussions, but we resolved any concerns of confusion quickly by suggesting use of the

This is a topic of direct concern for Radio World readers, many of whom are the ones who get the call that the transmitter is down or the generator has knocked out.

term "first informers," a term already coined months earlier by the NAB in their many published documented disclosures and emergencies. Lyle said, "Nobody can argue that, whether a 'first responder' or 'first informer' role in saving lives."

IBA noted that the legislation faced no objection from the Illinois Emergency Management Agency, the Illinois Sheriff's Association, the Illinois State Police or the City of Chicago. The lack of a single "no" vote in the legislature suggests that law enforcement raised no meaningful concerns, because when

FROM THE EDITOR

Paul McLane

steps talk, lawmakers usually listen. It's evident that IBA has any effective state interest groups and in anticipating situations before they reach the public eye. Now the state association will work with the Illinois Emergency Management Agency in designing a training curriculum that broadcast and cable per emergency credentials.

This is a legislative win for the IBA and another model for state associations to follow. It further is a huge direct concern for Radio World readers, many of whom are the ones who get the call that the transmitter is down or might be confronted with a police officer "Sorry, I can't let you through."

I'm interested in hearing from readers who have had experiences good or bad with such credentialing programs, and what others can learn from the experience. Write to me at paul@nbmedia.com.

One engineer told the Wisconsin Broadcasters Association about an instance in which he responded to a transmitter problem late one evening by police who believed he was the one who'd been stealing copper recently. It didn't help that they found him with a screwdriver and a piece of equipment in his hands. A couple of phone calls to the station made things right but the engineer said he was "really glad" he had that emergency credential card. "It made them put the guns away."

The Illinois bill also highlights the good work that state broadcast associations can do and further demonstrates how associations can reinforce one other. National Alliance of State Broadcasters Association for helping keep our close family of state broadcasters association informed and involved.

In having passage of the bill, be emphasized that local broadcasters have proved many times to be the first means for first responders to disseminate emergency information to the public. For him, this bill was all about "allowing us to do what we do best during emergency situations: keeping the public informed."

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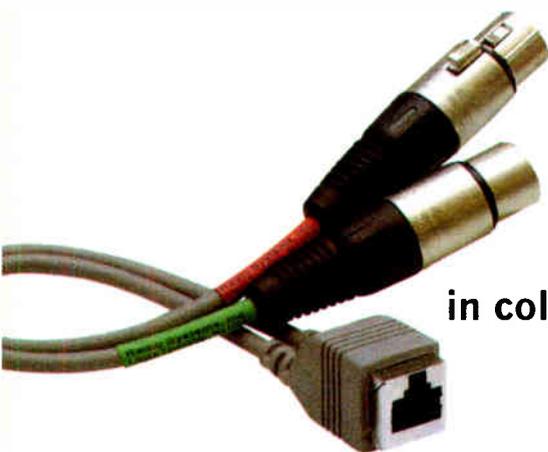
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