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NewBay Media

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INSIDE

PORTRAIT OF RADIO AS A YOUNG BAND

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OB-LA-DI, OB-LA-DA

- Desmond might not take his barrow to these Marketplaces, but you'll find lots of signal monitoring, remote control, test and EAS. — Page 22

YOU DOWN WITH AOIP

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Brazil Broadcasters Push AM Migration

ABERT's Daniel Slaviero says move to FM would be voluntary

NEWSMAKER

BY CARLOS EDUARDO BEHRENSDORF

The U.S. radio industry is not the only one exploring ways to help AM broadcasters.

Brazil radio observers expect their government to publish a decree in November detailing an optional migration process for AM radio to the FM band. In cities where the FM spectrum can't accommodate new channels, it will be necessary to extend the spectrum using television Channels 5 and 6.

Brazil — the largest country in South America and home to the world's fifth-largest population — has about 1,800 AM stations.

Brazilian President Dilma Rousseff okayed the migration concept in June, and the Ministry of Communications formulated an outline this summer and early fall. Rousseff was expected to sign off on the actual plan in November.

As we've reported, Brazil sought to settle the AM migration issue before deciding on a digital radio standard or standards for shortwave, AM and FM. In pursuing this plan, the nation follows partially in the footsteps of Mexico, which approved a voluntary AM migration plan this year. Approximately 540 AMs there plan to migrate to FM.

Daniel Slaviero, president of the Brazilian Association of Radio and Television Broadcasters (ABERT), talked with RWI freelancer Carlos Eduardo Behrensdorf about what led to the AM migration decision and how the moves would proceed.

RW: What do proponents say are the advantages of migration?

Slaviero: ABERT and the state associations of broadcasters view the migration as critical to the future of AM radio. On the FM band, [AM] broadcasters will gain transmission quality. Being located in a lower position in the spectrum, the AM band is very susceptible to noise and interference, which increases with the urbanization. Also, the mechanical

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A Conveyer Belt Wonderland: Mark Persons road-trips and looks inside Digi-Key to find out what has made the company successful for more than four decades. Page 8

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ABERT

(continued from page 1)

noise caused by electrical networks and factories, for example, generates spectral "noise" in the frequency bands, and AM radio is the first to be affected, followed by shortwave. The interference also affects other bands used for broadcasting, but with less intensity.

The migration will also enable broadcasters to get better integrated in the current context of technological convergence. The technical characteristics of signal reception, especially the need to use large antennas to capture the signal, have hindered the reach of AM radio. For example, cell phones have FM reception. But many vehicles leave the factory already without a medium-wave receiver.

RW: *How many broadcasters would move and what is the timeframe?*
Slaviero: Since the migration is optional and costly, we don't have a ballpark figure of how many broadcasters will move. The government estimates that the decree, containing the rules for the reallocation, will be published this month. Therefore, the migration could be expected to begin in early 2014. In small towns where there is space on the dial, the AM stations will immediately move to frequency modulation. But in large cities, where the spectrum is crowded, it will be necessary to extend the spectrum of the FM band to television Channels 5 and 6. In this case, the migration will take place gradually as these channels get released after the analog television signal is turned off, which will occur between 2015 and 2018.

RW: *Who conceived and led this effort and how did they win the support of broadcasters?*
Slaviero: Given the problems that AM radio faces, ABERT and the state broadcasting entities agreed that the best solution for the AM is migration. We proposed the migration to the government, which is now responding favorably to the petition of the broadcasting industry.

RW: *Was migration a contentious issue?*
Slaviero: No. There is a consensus that the most important thing is to rescue the AM radio and to ensure the provision of services, with more quality to the listeners. The migration will strengthen the radio industry as new media emerge and begin to take away attention from the traditional media.

RW: *How will AM stations pay for the costs of the transition? Is the government offering a subsidy?*
Slaviero: The government is not offering a subsidy. ABERT supports access to financing options, but we have not gotten a reply from the government regarding this issue yet. There is a clear indication that the broadcasters will have to pay the price difference between the basic AM or FM license, established according to the station power, coverage area, etc. We are talking about the minimum cost of the license, set in the previous ordinance.

RW: *Besides cost, what other obstacles will individual stations face?*
Slaviero: The broadcasters will have to pay for the costs incurred from any technological change. Basically the stations will need to invest in order to adapt their transmission systems.

RW: *Are there sufficient receivers in the marketplace for stations to be heard? Will there be a campaign to expand the number of FM receivers capable of receiving these stations?*
Slaviero: In the cities where there is no need to expand the dial, listeners will receive the signal in their current receiver. On the other hand, in cities where the television Channels 5 and 6 will be used, it will be necessary to increase the number of receivers. There are already receivers in the market capable of receiving the signal. Some new equipment will only require a software upgrade — for example, some new cell phones. This will be a gradual change and the manufacturers will have to adapt to the frequency spectrum. That's why there will be a simulcasting period when broadcasters will operate in AM and FM simultaneously.

RW: *What will happen to the vacated AM spectrum?*
Slaviero: The vacated spectrum will be returned to the government and they will conduct the appropriate research on new uses for the band. But since the migration is optional, and not all broadcasters will make the transition, this spectrum will continue to be used for the AM band.

(continued on page 5)

Given the problems that AM radio faces, ABERT and the state broadcasting entities agreed that the best solution for the AM is migration.

When Lightning Hit, McCoy Stepped Up

A radio group makes special note of the efforts of its engineer in Georgia

FROM THE EDITOR

BY PAUL MCLANE

Beasley Broadcast Group does a great job of highlighting engineers when it salutes outstanding employees each year. More radio groups should single out technical staff members in this way.

Most recently the company, which has 44 stations in 11 markets, made special note of the work of Charlie McCoy.

He oversees the technical infrastructure of Beasley's Augusta, Ga., cluster, including radio station studios for seven FMs and three AMs, transmitter sites and IT. In the press release, Vice President and Chief Technology Officer Mike Cooney was quoted saying McCoy had really stepped up in a recent lightning strike incident.

I was interested in hearing more so I asked Cooney for details.

"Several months ago, the building or STL tower in Augusta, Ga., sustained a lightning strike that knocked all 10 collocated stations off the air," Cooney told me by email.

About 25 percent of the cluster's router was damaged, as were several pieces of studio electronics. That router model is no longer manufactured, and the staff would have needed to send the circuit cards and consoles in for repair or replace them with a new product. The stations had already intended to replace the older router with an IP system, so they ordered two new consoles from Wheatstone and reconfigured the old one to get back on the air temporarily.

Within a day, Charlie McCoy had made the necessary changes to the old router to get all 10 stations back on-air

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Charlie McCoy, inset, also is shown working knee-deep in wiring pulling out old cable. Standing is Dave Cooke, IT manager in Fayetteville.

THIS ISSUE

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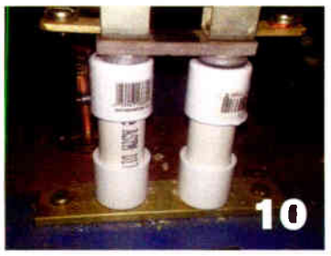


Courtesy James O'Neal

(continued from page 4)

and operating normally. Within about 10 days, he had replaced much of the other damaged studio electronics.

The two new consoles and router showed up at the stations in due course. But Charlie's work wasn't done.

TRYING CIRCUMSTANCES

"While the new consoles and router were still in the hallway, waiting for installation, the building took yet another lightning strike. This one was more severe. The first strike caused about $60,000 in damage and the second strike caused at least $150,000 in additional damage," Cooney continued.

The second bolt destroyed the entire old router, every existing console, eight studio phone systems, two STLs, three Sage EAS units, every satellite receiver, the building phone and security systems and dozens of other studio electronics. It also blew a hole in the roof of the hotel next door and took out much of their electronics.

Lightning is bad like that.

Fortunately, Cooney said, the majority of the BE AudioVault systems were still operating, as were most of the STLs.

McCoy started with the highest-billing station and worked his way through the cluster to start putting 10 stations back on the air.

McCoy started with the highest-billing station and worked his way through the cluster to start putting the stations back on the air. "Charlie had eight of the stations back on the air within a day," Cooney said.

The staff immediately ordered more new consoles and routers.

The real work started when the consoles showed up and the team started to remove the dead router and all the cabling. Wheatstone shipped products quickly and sent engineers to help with the installation.

"Dave Cooke, engineer for Beasley's Fayetteville, N.C., cluster, traveled to Augusta and gave Charlie vital onsite support. I flew into the market to help manage the project, concentrating primarily on making sure this never happened again," Cooney said.

"Within a week of the second strike, we made major changes to the grounding of the tower, satellite dishes, electrical system and all the studios."

His work during this "engineer's nightmare," Cooney concluded, is why Charlie McCoy was an obvious choice to receive recognition from Beasley at the company's annual meeting.

"I can't say enough about what an amazing job Charlie did to get the stations back on the air during both lightning strikes."

And I can't say enough about companies that take the time to appreciate the efforts of their engineers and technical staff during trying circumstances.

ABERT

(continued from page 4)

***RW:** For countries that may be considering such a migration, what do broadcasters and regulators need to know or be aware of?*

Slaviero: It is crucial to examine the regulations and to talk extensively about the issue with every party involved. You should be aware that the FM spectrum may not be sufficient to accommodate the migration, so it will be necessary to make some changes, as is the case of Brazil, which will extend the range of frequency modulation to the TV Channels 5 and 6.

In Mexico, for example, the migration took place only in the cities where it was possible to do it on the dial. In the cities where there was no space, the change was not implemented and they have no plans for the near future. We can say that in Mexico only one part of the process was finished.

***RW:** Would you like to add anything else?*

Slaviero: Hopefully this semester the Congress will review the government's proposal and will publish a law.

The migration is very important for Brazilian radio. We are [talking about] a robust market, with more than 4,500 commercial radio stations — from these, 1,800 are AMs — and 200 million conventional receivers.

Radio in Brazil reaches approximately 50 million households (88.9 percent) and, contrary to what one might think, its presence in day-to-day lives grows, favored by the Internet and various devices such as computers, cell phones, iPods, MP4s and tablets. These devices are helping to expand the reach of radio, which now can be heard in new ways. Once the quality of the sound and the scope of the reach are guaranteed, our stations should constantly strive to improve their content and therefore maintain the relevance of the media.

IBiquity Illuminates License Fees

Tech developer responds to complaints that its fees are 'astronomical'

BY LESLIE STIMSON

In a recent opinion piece here about AM revitalization, iBiquity Digital Senior Vice President for Broadcast Programs and Services Joe D'Angelo wrote that the company's digital technology provides a cost-effective path for AM to evolve.

Both Radio World and iBiquity received comments in response, with readers complaining about "astronomical" HD Radio licensing fees. I then heard back from iBiquity Director of U.S. Broadcast Sales Rick Greenhut, who asked for a follow-up opportunity to explain the fee structure.

He tells me the fees actually went down again recently because the company wanted to make it easier for smaller-market stations to convert to digital. "We're trying to open the tent wider. We want [digital conversion] to make financial sense for as many people as possible." Greenhut also that emphasized that the main channel licensing fee is a one-time, rather than a recurring, cost.

That one-time fee is now $10,000. This compares to a published rate in 2009 of $25,000, though after discounts an average station at the time paid about $15,000, a company official told me then. In 2010, fees were reduced; iBiquity rolled out several options under which the cost ranged from $10,500 to $12,500 depending on payment schedule.

Here's how the $10,000 fee works: A station pays $2,500 down. "They then have three years to sign on an HD station. At that point we bill them for the balance," with payments spread out over five years. That works out to $125 a month, according to Greenhut, who said there's no interest involved.

Another reason to scale back prices now, he said, was "so a guy in a small market could make money in the short term with HD."

He's referring to return on investment that he said some digital owners are earning with multicast channels. Those involve a separate licensing fee based on a revenue-sharing model. Stations pay 3 percent of incremental net revenue derived from HD2, HD3, etc. channels, with a minimum annual fee of $1,000. Payments can be made quarterly.

For stations carrying third-party data services such as traffic on their digital channels, an auxiliary data fee also applies. This is the same amount as the multichannel fee.

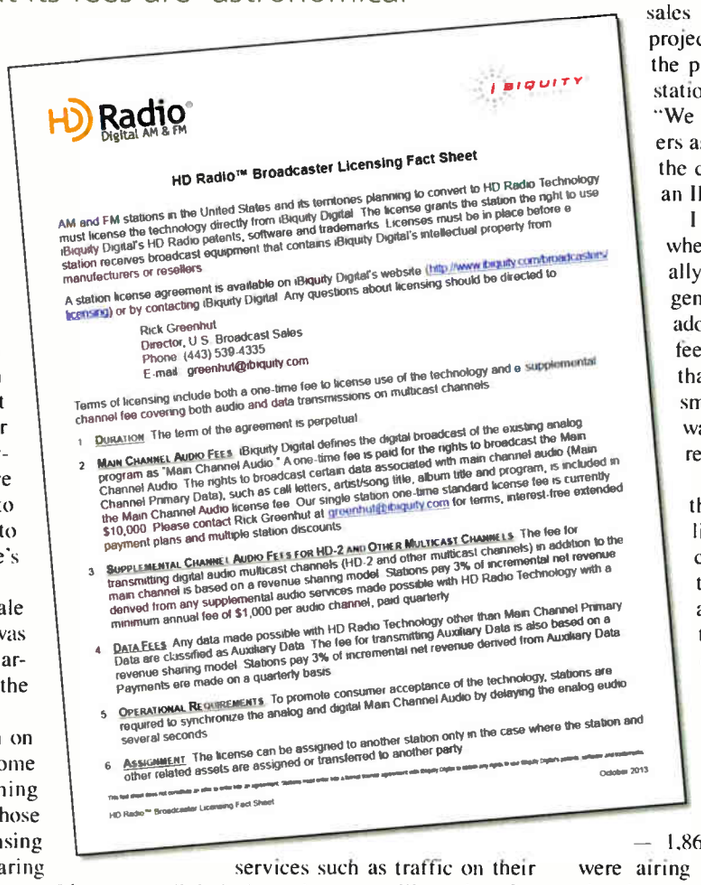
While some readers may look at the drop in fees and wonder whether iBiquity's business model is sustainable, Greenhut told me the company always saw receiver and chip sales as being where it would get the majority of its revenue.

"With auto OEM and aftermarket sales running so far ahead of projections, I was able to drop the prices to make it easier for stations to upgrade," he said. "We never looked at broadcasters as providing the majority of the company's revenues. We're an IP company."

I also remember that, back when HD Radio was still usually just referred to by the generic term IBOC, early adopters enjoyed lower license fees. Greenhut acknowledged that the fees did start out smaller before the technology was proven and there were receivers in the market.

In the end, he estimates, the cost of an iBiquity license to a station typically is 10 percent of its total conversion costs. And are stations still converting to digital? Yep, at a rate of one or two per week, says Greenhut. "There's nothing like having a competitor nip at your heels with an HD2 translator," he tells me.

Some 2,180 stations — 1,864 FMs and 316 AMs — were airing the hybrid analog/digital signals as of mid-October, and those have led to the creation of an additional 1,450 digital-only multicast channels. By comparison, in early 2010 there were about 2,000 stations and 1,100 multicast channels, I reported at the time.



HD Radio Digital AM & FM

iBiquity

HD Radio™ Broadcaster Licensing Fact Sheet

AM and FM stations in the United States and its territories planning to convert to HD Radio Technology must license the technology directly from iBiquity Digital. The license grants the station the right to use iBiquity Digital's HD Radio patents, software and trademarks. Licenses must be in place before a station receives broadcast equipment that contains iBiquity Digital's intellectual property from manufacturers or resellers.

A station license agreement is available on iBiquity Digital's website (http://www.ibiquity.com/broadcasters/licensing) or by contacting iBiquity Digital. Any questions about licensing should be directed to:

Rick Greenhut
Director, U.S. Broadcast Sales
Phone: (443) 539-4335
E-mail: greenhut@ibiquity.com

Terms of licensing include both a one-time fee to license use of the technology and a supplemental channel fee covering both audio and data transmissions on multicast channels.

1 DURATION. The term of the agreement is perpetual.

2 MAIN CHANNEL AUDIO FEES. iBiquity Digital defines the digital broadcast of the existing analog program as "Main Channel Audio." A one-time fee is paid for the rights to broadcast the Main Channel Audio. The rights to broadcast certain data associated with main channel audio (Main Channel Primary Data), such as call letters, artist/song title, album title and program, is included in the Main Channel Audio license fee. Our single station one-time standard license fee is currently $10,000. Please contact Rick Greenhut at greenhut@ibiquity.com for terms, interest-free extended payment plans and multiple station discounts.

3 SUPPLEMENTAL CHANNEL AUDIO FEES FOR HD-2 AND OTHER MULTICAST CHANNELS. The fee for transmitting digital audio multicast channels (HD-2 and other multicast channels) in addition to the main channel is based on a revenue sharing model. Stations pay 3% of incremental net revenue derived from any supplemental audio services made possible with HD Radio Technology with a minimum annual fee of $1,000 per audio channel, paid quarterly.

4 DATA FEES. Any data made possible with HD Radio Technology other than Main Channel Primary Data are classified as Auxiliary Data. The fee for transmitting Auxiliary Data is also based on a revenue sharing model. Stations pay 3% of incremental net revenue derived from Auxiliary Data. Payments are made on a quarterly basis.

5 OPERATIONAL REQUIREMENTS. To promote consumer acceptance of the technology, stations are required to synchronize the analog and digital Main Channel Audio by delaying the analog audio several seconds.

6 ASSIGNMENT. The license can be assigned to another station only in the case where the station and other related assets are assigned or transferred to another party.

This fact sheet does not constitute an offer to enter into an agreement. Stations must enter into a formal license agreement with iBiquity Digital to obtain any rights to our iBiquity Digital's patents, software and trademarks.

October 2013

HD Radio™ Broadcaster Licensing Fact Sheet

NEWSROUNDUP

FCC DEADLINES: After the government shutdown, the commission set new deadlines for broadcast-related and other filings. Basically it extended all deadlines 16 days, the duration of the shutdown. Regulatory and enforcement filings that would have been due Oct. 17–Nov. 4 were changed to Nov. 4; Special Temporary Authorities expiring Oct. 1–22 were extended to Nov. 4.

LPFM: Low-power FM applications are now due Nov. 14; proponents have told Radio World they were asking the commission to extend the period another week.

SIRIUSXM: The Sirius FM-6 satellite launch was delayed several times. International Launch Services said it postponed the launch because of "issues with the satellite ground station network" required for the takeoff and early orbital operations of the Sirius FM-6 spacecraft. As a precaution, SSL of California, which manufactured the satellite, and SiriusXM decided to take more time to evaluate issues related to required remote satellite ground stations. Sirius FM-6 is a high-power satellite with an expected 15-year geostationary service life. Khrunichev State Research and Production Space Center and ILS planned to make another attempt to launch the spacecraft using a Proton rocket on Oct. 25.

RF EXPOSURE: Of public comments that were due on various issues during the shutdown, of interest to our readers are the additional RF exposure changes. Reply comments are now due Nov. 18 for "Reassessment of Exposure to Radiofrequency Electromagnetic Fields Limits and Policies." File comments to ET Dockets 03-137 and 13-84.

'DOC' MASOOMIAN: A radio engineer who retired from WQXR(AM/FM) New York and then repped Northeast Broadcast Labs in Texas, Zaven "Doc" Masoomian died Oct. 11 at age 92. Masoomian began in radio in the 1930s. A pilot, he was held by Germany as a prisoner of war during World War II. Several engineers shared memories of him on the website of SBE Chapter 67 Dallas-Ft. Worth at: *chapter67.net*.

EQUITY: NRG Media has a new majority investor. Waitt Company and McCarthy Capital agreed to sell their stake in the Midwest-based, 45-station group to funds associated with Cyrus Capital Partners. This marks Cyrus' first time investing in radio. Terms were not released; however, the NRG Media management team remains in place as a "significant owner and operator" of the broadcaster, according to the announcement. NRG was formed in 2005 when New Radio Group and Waitt Media merged. NRG President/CEI Mary Quass said the investment offers NRG stability for the future with the potential to expand into new markets.

NEXTMEDIA: Dean Goodman's Digity, an affiliate of Palm Beach Broadcasting, plans to buy most of NextMedia's radio stations. Digity said the deal is for the purchase of 33 NextMedia stations in eight markets: Chicago, San Jose, Greenville-New Bern-Jacksonville, Canton, Saginaw, Milwaukee, Myrtle Beach and North Dallas. The transaction includes two additional stations in the Chicago area currently held by The Mile High Station Trust that would be sold to Matrix Broadcasting.

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Digi-Key, Success By the Numbers

Our *Tech Tips* column takes a road trip and visits the electronics parts company

TECHTIPS

BY MARK PERSONS

It is easy for me to write about Digi-Key, having been a customer of theirs for more than 30 years. This company has grown from a small local concern to an international supplier of electronic parts. Interestingly, international is now 40 percent of Digi-Key's business. They sell to manufacturers, which order parts by the truckload, as well as to design engineers and small companies, like mine, ordering components for building and servicing broadcast equipment.

Resistors, capacitors, ICs, transistors — you name it, they probably have it. I remember when the Digi-Key catalog was something like the shopper in a local newspaper. It grew to a whopping 2,896 pages before being discontinued in 2011 in favor of their online version. With 960,000 parts on hand in an 800,000-square-foot facility, I can see why the change was necessary. How did they do that?

Well, the story goes back to 1972, some 42 years ago, when Ron Stordahl, N5IN, was looking for parts to build a "digital keyer" for his amateur radio transmitter. He purchased more than needed and then sold parts to others. One thing led to another and he had a company that grew into a $1.5 billion-per-year concern.

It takes 2,600 employees to make this company run, in a town of only 8,500 people in northwestern Minnesota. No fewer than 650 suppliers feed the demand at this place. Some 3.3 million orders are processed annually. They ship as many as 17,000 orders in one day, mostly by UPS and FedEx, both of which have direct flights daily from Thief River Falls to their respective national hubs.

Is Ron Stordahl still involved? Yes, he still owns this privately held corporation, but has turned over the presidency to lifelong friend Mark Larson.

I took the opportunity to interview Larson recently to learn more. He said the company pays competitive wages but enhances the employee relationship with strong benefits including college tuition in some instances.

On average, employees stay at Digi-Key for seven years. A Midwestern work ethic and management style have led to Digi-Key be rated number one for customer service by independent surveys, I'm told. Some 150 employees are engineers helping design engineers select parts.

It is interesting to note that the cell or smartphone that you carry today was probably prototyped with parts from Digi-Key. A huge part of their business is catering to electronic designers worldwide. The time between order entry and a box with parts ready to go out the door is 20 minutes or less. An order can be on the other side of the world in 54 hours or less. Customers order online 24/7 or call in an order to knowledgeable order takers. I noticed a tracking chart showing delay time between a call and when a sales representative answered. It averaged 4 to 5 seconds.

Employees pick parts from bins in their immediate area and put them, wrapped and bar coded, on conveyor belts, which move the items to a shipping station. That location will receive parts from other sections of the plant until the order is complete and ready to be packed. Automatic bar code readers handle the sorting process quickly and efficiently. That same conveyor belt

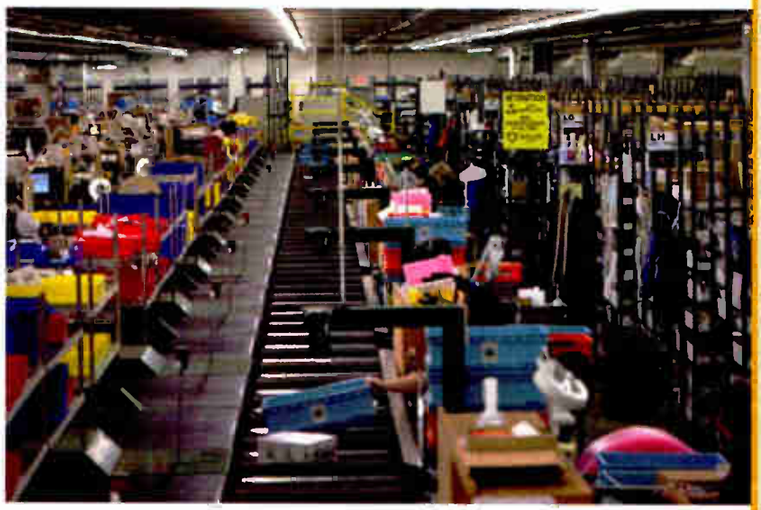
(continued on page 12)

The Digi-Key logo is recognized internationally as a parts house for technicians, designers and manufacturers alike.

The huge Digi-Key facility is located in a small Minnesota town of only 8,500 people. Some 2,600 people work here.

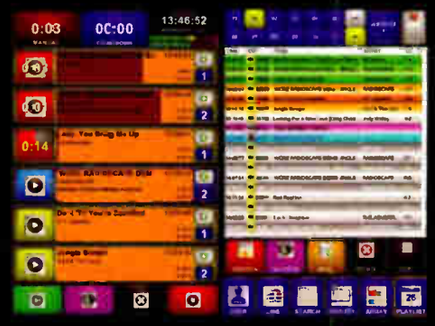
Digi-Key President Mark Larson explains the 'big picture' of the company, which ships worldwide to the tune of $1.5 billion per year.

A package of resistors with a bar coded label and complete product description; hard to go wrong with this detail.



Workstations add and subtract items from the conveyor belt, which never stops. Bar code readers on green arms keep track of everything.

A Complete Radio Station in Just Two Rack Units



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A Cheaper Way to Repair Porcelain Standoffs

Also: thoughts on whether it really is worth it to 'do it yourself' sometimes

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

Larry Langford is chief engineer and owner of WGTO(AM/FM) in Cassopolis, Mich. He writes that one of the mysteries of radio is why porcelain standoff insulators in phasors and ATU units crack and shatter for no apparent reason. Larry is sure it has to do with thermal shock and a host of other things; but there's no question that when they go, they need to be fixed.

These supports are not cheap, and the replacements are just as fragile. So you ask yourself if there is a better way.

A quick run to the hardware store produced an acceptable replacement for Larry, and perhaps for you, too. Larry selected 3/4-inch PVC with end caps. You can fabricate a nice replacement for lower-power operations that way.

Simply cut the PVC a half-inch shorter than the porcelain standoff and drill the end caps for 1/4-20 inch stainless hardware. Insert a screw in the cap and then press it on the PVC tube and mount it to the panel by screwing the tube down.

Then drill the other end cap and mount the hardware and tighten as required. Once the hardware is installed, slip the end cap over the open end of the PVC and you now have a great and cheap replacement. No need to use PVC cement. The caps will hold fine by friction.

You can add PVC cement if you desire, but getting the hardware off after using the cement will be a challenge. Either way, no more shattered insulators!

Fig. 1 shows a J-Plug jack held with the PVC insulators. Fig. 2 shows another application.

While Larry doesn't know the exact "leakage" of PVC, the voltage rating is the point of concern. The porcelain insulators are selected to insulate components from ground. The caution is to not use this kind of standoff at high current or voltage points within the network.

Reach Larry Langford at *Larrylangford@aol.com*.

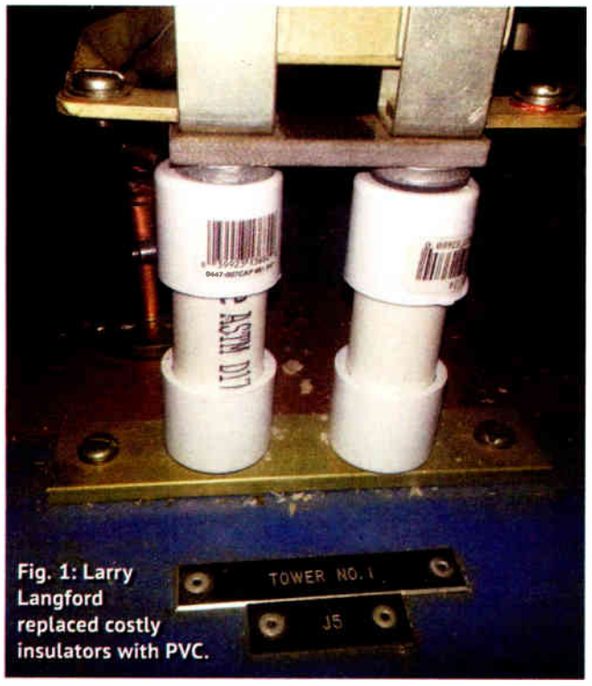

Fig. 1: Larry Langford replaced costly insulators with PVC.

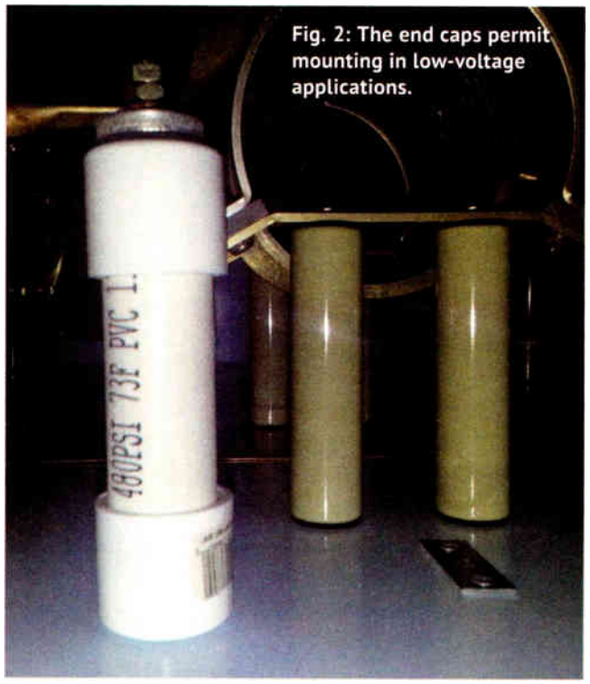
Fig. 2: The end caps permit mounting in low-voltage applications.

I received several calls from readers who were delighted with Buc Fitch's dummy load project.

RW reader James Walker wasn't as impressed. He writes: "I like to build things, too, but how much is your time worth? Even if the parts were only 20 bucks, the couple of hours spent cobbling it together had to raise the price well above a hundred.

> **Building is fun,** and I've 'imagineered' all sorts of little gizmos. But I've found that I can buy used and leverage my budgets.
>
> – James Walker

"At the Dayton Hamvention a couple of years back, a two-way outfit was selling 50-watt cell wave reject loads with Type N connectors for 10 bucks each. I bought several. They're good to well beyond a gigahertz — 1.1 to 1," he continued.

"If I'm on a client's dime, I'm more than a bit leery of spending time this way. If it's my time, I can build another throttle for my trains in about the same time (and about the same parts cost). My 2,500-watt Bird oil load was less than a hundred at the hamvention.

"Building is fun, and I've 'imagineered' all sorts of little gizmos. But I've found that I can buy used and leverage my budgets (both time and money). Just a thought."

Buc Fitch thanked Walker for the honest comments. Buc replies further:

(continued on page 14)

The right tool makes all the difference.

Internet Radio is the future, and until now staying on top of your streaming audio performance has been a real challenge. Limited software tools and unreliable PC based solutions just aren't cutting it.

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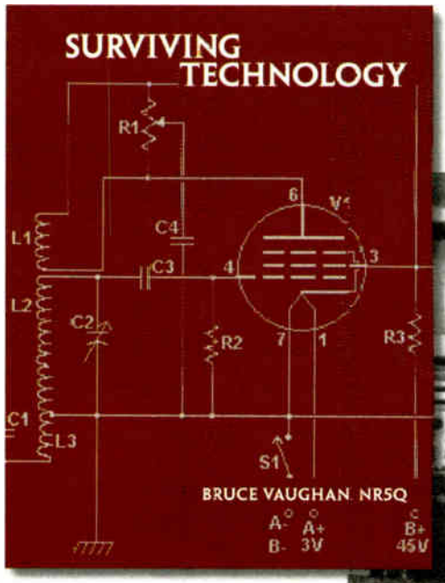
INOVONICS BROADCAST

Autobiography Captures Era Gone By

Bruce Vaughan's 'Surviving Technology' is a treasure trove of radio history

BOOKREVIEW

BY JAMES E. O'NEAL



As broadcast engineers, we sometimes see ourselves as part of an equation with two variables: The hardware (what we install and keep running) and the software (what the program director tells us we have to put on the air).

Actually, there have to be two more elements in the equation or the concept of broadcasting doesn't work. These are the audience we're trying to reach and the receivers through which they listen to us.

Over the years, a lot has been written about the first two parts of the broadcasting equation, and even the third variable has gotten considerable ink in terms of audience studies. However, save for a few "service" columns in a couple of radio/TV magazines that have been out of business for decades now, not much has been written from the perspective of the serviceman.

True, in this "throwaway economy" that we live in, it's become cheaper and more convenient to consign a broken radio or TV set to the landfill and head out to the big box store to purchase a replacement.

A few decades ago, though, when the typical consumer's radio quit playing, he or she headed down to Ron's Radio Shop or maybe the service desk at Allen's Appliances and waited until someone worked some magic and brought the set back to life. A few dollars changed hands and the receiver was just as good as new.

Today, unfortunately, the service profession, which at one time probably numbered in the tens or maybe hundreds of thousands of men and women has trickled down to almost nothing. It has become more cost-effective to replace a set than to repair it (and the latter isn't even an option unless you can find someone with the necessary skills, time, patience, service information and access to replacement parts).

An autobiography by the late Bruce Vaughan allows us to view the consumer service side of the broadcasting industry through the eyes of a former serviceman, long-time Arkansas repairman and broadcasting devotee.

A young Bruce Vaughan poses with his new radio service shop test equipment, circa 1948.

Photos courtesy Liz Lester Design

GOLDEN AGE

Vaughan was born in a rural Arkansas community near Springdale at just about the same time as broadcasting came into being in the early 1920s, and was smitten at an early age by the magic and power of this new form of communication.

In "Surviving Technology," Vaughan recalls being introduced to radio during a visit by his mother to the home of one of the community's society matrons. The year was 1925 and the radio set in that home was the first in the small town. Vaughan was only three, but that memory remained with him for a lifetime and influenced his path over the next nine decades or so.

Another seminal moment in Vaughan's life occurred during a visit in the early 1930s to kinfolks living in the "big city" (comparatively) of Muskogee, Okla.

Vaughan was about 10 years old and totally hooked on radio. When he learned that one of the town's wealthiest families had launched a radio station, he prevailed upon a cousin to arrange a tour. The ensuing visit remained with Vaughan for the rest of his life and is

(continued on page 14)

DIGI-KEY

(continued from page 8)

delivers parts to stock locations at the same time. Very clever!

Years back I received an incorrect part from Digi-Key. It took less than 60 seconds on the phone to determine that the part came from the right area and the right distance from the conveyor, except that it was from one row over. The person I talked to knew how this must have happened and sent me the correct part immediately.

Another time I ordered a wrong part, and Digi-Key has happy to take it back and refund all but the shipping. I understand the system in place now makes that kind of mistake almost impossible.

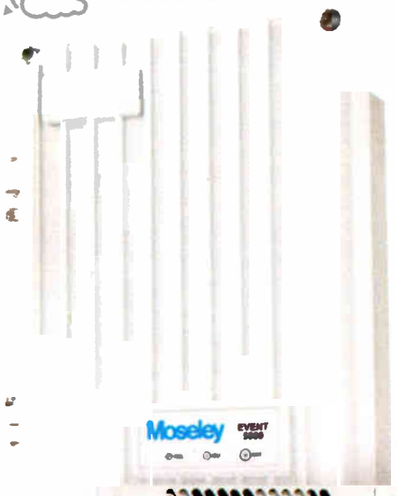
After visiting the plant, I can see why Digi-Key is a well-respected supplier of parts to the electronic repair industry, and sixth-ranked electronic component supplier in the world. Interestingly, CBS took note of Digi-Key recently in an Osgood File report; visit *radioworld.com/links* for the transcript. And visit the company website at *www.digikey.com*.

Customers are instructed to check packing materials for components they did not see right away and are reminded to recycle. Each worker uses a grounded wrist strap to prevent static discharge failures of components.

Mark Persons, WØMH, is a professional broadcast engineer certified by the Society of Broadcast Engineers and has more than 30 years' experience. He has written numerous articles for industry publications over the years. His website is www.mwpersons.com.

HIGH CAPACITY
EVENT STUDIO TRANSMITTER LINKS

outdoor unit



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indoor unit

INTELLIGENT SYSTEM DESIGN

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

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

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

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'SURVIVING TECHNOLOGY'

(continued from page 12)

captured in his book — even down to the elevator ride (his first) necessary to ascend to the station, KBIX, located atop Muskogee's Bixby Hotel:

Through the glass wall we could see a small studio about 12 x 12 feet with a grand piano in one corner of the little room. The only other furnishings were three folding chairs and two microphones.

More interesting by far was the radio transmitting room [...] A young man, neatly dressed in a white shirt and tie was sitting in front of two racks of equipment [...] He was reading the local news and weather report.

As I sat watching the young man read the news I thought of the words traveling out from the radio station in all directions — for maybe fifty miles or more. I wondered how many people were sitting at home listening to the very same words I was hearing.

As he talked I noticed he kept glancing at the meters on one rack and I could see them move in cadence with his voice. Red and green pilot bulbs glowed from several different sources. This was strictly big-time radio [...] I must have admired the gear for at least five minutes — I don't think I ever saw anything so beautiful.

Vaughan knew then that he would be pursuing a career in the medium. This turned out, however, not to be in broadcast engineering. After high school, he enrolled in engineering studies at the University of Arkansas, but his student days were cut short with the outbreak of World War II. He volunteered for military duty, spending most of the next four years in maintaining military communications equipment. Vaughan did re-enter college after his military stint, but soon decided that it was not for him and set up a radio service business in the small town of Springdale, Ark.

From 1946 until his retirement, Vaughan worked as a repairman in what he termed the "Golden Age" of consumer electronics.

Photos courtesy Liz Lester Design

Shown is Vaughan's ham radio 'shack' (probably photographed in late 1941).

Though I did not realize it at the time, I was among the fortunate few who would witness, at very close range, the death of radio's golden age, the coming of television and the invention of the transistor. In 1946, tape recorders, LP records, pocket radios, stereo, video recorders and computers were only dreams in the minds of a limited number of inventors and scientists. Few today realize the social and economic changes wrought by the explosion of technology in the field of electronics. A ringside seat where one could not only observe but also participate in all this emerging technology was worth more than gold — in retrospect, a lot more.

Thanks to Vaughan's excellent memory, the readers of his book are able to share his experiences and witness the growth of the consumer side of the broadcasting business, as it morphs into what we know today. He shares both the good and the bad sides of radio servicing — the tricks customers sometimes played to

(continued on page 18)

WORKBENCH

(continued from page 10)

"You know, it's funny that you should bring forward this thought of time vs. worth today. I spent the morning at a hamfest and most of what I saw was, sadly, appliances operators. People bragging about how well the gear bought from a catalog from someone else's recommendation made them unique.

"What did they bring of themselves? What did they learn? What skills did they acquire and polish? If you discount snapping cables together or loading someone else's software ... they really did not furnish any personal input," Buc muses.

"If radio is just a business or being a ham is just a virtual experience to you, then more power to you, as you are getting what you want — which is not much.

"The dummy load project is not so much about saving money but mainly a vanity, sanity sort of thing. All the little projects and ideas that I've been writing about over the last 20 years are just departure points to put your own uniqueness on a final design and assembly. To wit, our little project to interface computer headsets to balanced 150-ohm inputs has precipitated about 10 permutations from readers.

"To paraphrase one of my most astute mentors, you learn by doing. You learn most from your mistakes, which you cannot make unless you do something ... and what is real thinking but coupling ideas together? Even a little project like this can yield incredible benefits, especially for neophytes."

IT manager and engineer Alan Jurison ran across a recall for APC surge suppressors manufactured before 2003. The affected models are pretty common; Al has seen them at broadcast stations as well as in his office! Affected products should be taken out of service immediately due to the risk of fire, and the owner should be advised to follow the instructions found on the APC Recall Site: *recall.apc.com*.

Even if you did not personally purchase these products, do a thorough inspection: under desks, inside racks and under consoles. Following a claims information and validation process, APC is offering customers a replacement product that is the same model/type, or a functionally equivalent model, at no charge.

Reach Alan at *ajurison@storm.net*.

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

Author John Bisset has spent 44 years in the broadcasting industry and is still learning. He handles West Coast sales for the Telos Alliance.

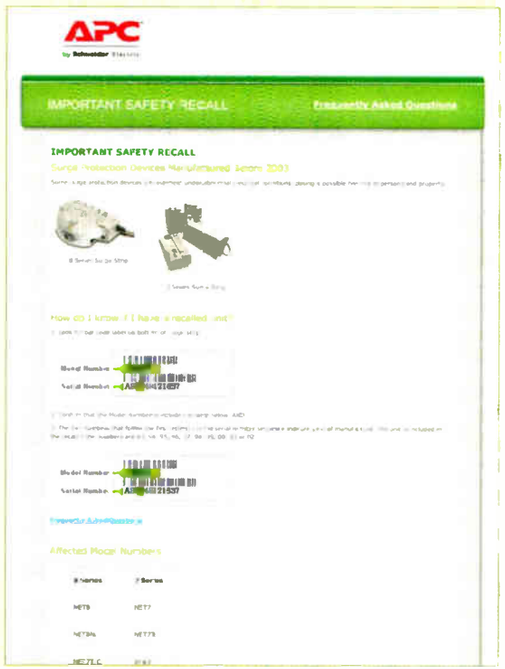

Fig. 3: APC posted a recall of certain surge protection devices.

bw broadcast

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A while ago, we loaded Jeff Keith up with a few WheatNet-IP BLADEs and some GP button panels, and locked him in a room to build a new audio processing lab. Our only requirement was that he implement AoIP using our WheatNet-IP technology.

What he came up with is pretty astounding. And it's a great story with plenty of pointers.

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Admit it - you want total control over your environment. With the LIO-48, that control is yours.

Wheatstone's new LIO-48 is a high-density logic BLADE for the WheatNet-IP Intelligent Network that can handle all those new conditional logic functions needed by today's busy studios.

The LIO-48 provides 48 universal logic I/O ports, each individually configurable, for turning devices on or off by time or event, for automatically adjusting the audio processing settings when a certain mic turns on, and for any other logic control you need in your studio operation.

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E-6 Is THE Industry Standard Control Surface

There's a reason so many stations choose E-6. Well, OK, there are a LOT of reasons.

E-6 brings tremendous horsepower to a very compact footprint. It's created to bring maximum control to minimum space with exceptionally intuitive operation. No wonder it's in SO many stations.

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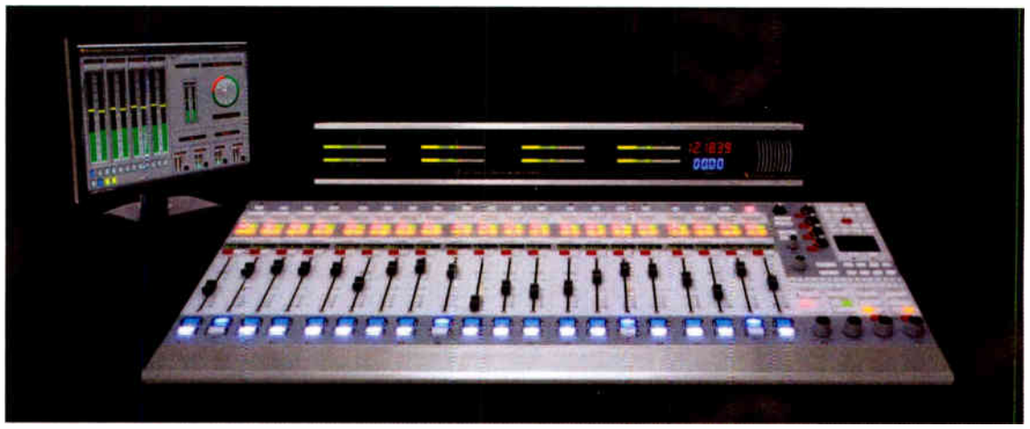


BLADE HONING 101

Aura8-IP: How you can put Eight Stereo Channels of Vorsis Processing to Work for Under $500 per Channel!

Placing a processor everywhere you'd like one has been costly and impractical. Until now. A single Aura8-IP gives you up to eight processors to use as you wish. Use it as a standalone processor with analog and digital inputs or make it a part of your WheatNet-IP network.

As a standalone processor, you get eight stereo channels of jaw-dropping Vorsis ultra high resolution processing power for under $500 per channel. That alone is worth the price of admission. But when you take advantage of Aura8-IP being a BLADE with its built-in utility mixers, web server, full logic, SNMP messaging and silence detection, and use all that with it's 8-channels of processing, its power is really unleashed.

Get more information here: INN4.wheatstone.com

Codec Pre-Processing

Audio from codecs is subject to environmental conditions - at the source and through the connection. Processing with Aura8-IP can clean it up nicely.

Low Latency Talent Headphone Processing

Often, the key to talent turning in their best performances is what they hear in their headphones. Give them a sound that drives them to brilliance with Aura8-IP.

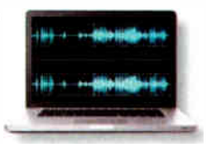
Remote Feed Conditioning

The great and hard thing about radio is that you can tie the world together on your broadcast. That means you can have audio flying in from all over. Aura8-IP is exactly what you need for all of it, at a price that will make you very happy!

Talkshow Call-Ins

Processing can make a huge difference in the on-air quality of call-ins on your talk shows. Aura8-IP is up to the task.

Web Streams



Whether you are streaming now or getting ready to, there's no better investment you can make in your station than to ensure those streams sound great. That's exactly what Aura8-IP does.

Mic Processing

Every microphone does a better job when it's processed not only for the voice that's speaking into it, but for the path it's taking on the way to someone's ears. Aura8-IP does a superb job processing microphone audio.

Satellite Uplink Peak and Spectral Control

The key here is keeping signals under control. Aura8-IP is perfect for the job, keeping an eye (or ear) on the peaks as well as ensuring the spectral range stays consistent.

IFB Conditioning

Clear communications between director, engineering and talent is key to presenting successful sports and multiple-report shows. Aura8-IP is perfect for cleaning up IFB.

Automation Streams

Wheatstone enjoys technology partnerships with the leaders in broadcast today. Use the AGC in Aura8-IP to keep your automation streams clean and under control.

STL Pre-Processing and Protection-Processing

There are a lot of dedicated STL systems out there. Or, if you have a WheatNet-IP, it's the perfect solution. No matter HOW you handle STL, let Aura8-IP handle processing to ensure the audio is optimized for it.

Multiple HD Feeds

HD Radio gives you the option of broadcasting multiple audio streams of varying quality. Make the most of each by giving them processing that will make them stand out.

Sweetening Incoming Commercials and Newsroom Feeds

Keeping your revenue sources sounding compelling can really help with audience perception and acceptance. Aura8-IP is a cost-effective solution for ensuring your entire audio stream sounds SWEET!

Wheatstone
BROADCAST AUDIO PERFECTIONISTS ™

'SURVIVING TECHNOLOGY'

(continued from page 14)

get a "free ride," the business arrangements and associated craziness necessary to get and keep a franchise to sell certain manufacturers' big-ticket-home electronics items, and more.

Vaughan also describes his own tactics for dealing with difficult customers. One if these involved installing a loop antenna that was concealed beneath the checkout counter in his shop and connected to a large, long wire outdoor antenna. The induced signal made the radios he repaired and sold perform much better than would otherwise be expected. (He notes that he never revealed this secret to anyone before the publication of his book.)

TECHNICALLY SPEAKING

An especially interesting chapter in his book is titled "The Lull Before the Storm." It describes his experiences as an early television adopter, beginning in 1948 when the nearest television stations were in St. Louis and Dallas — each nearly 300 miles from Vaughan's location in northwest Arkansas.

Wisely sensing that television would eventually be accepted by the public, Vaughan was quick to learn all he could about this new type of broadcasting, to the point of purchasing what he believed to be the third television set in all of Arkansas. He also made the first retail TV set sale in the state.

The "technology" in Vaughan's book is not limited solely to broadcasting, of course. He also spends devotes some time to describing the early private telephone companies that sprang up in rural Arkansas, and the rise of the electric power generating and supply business. The first systems were strictly "power on demand," with electricity only available during the evening hours, something that now seems incredible in our 21st century, 24-hour-news-cycle world.

For many years, Vaughan was an ardent amateur radio operator too, and he chronicles a lot of his memories in this area, especially his passion for regenerative receivers. (The book is dedicated to the memory of Edwin H. Armstrong, the originator of the regenerative circuit.) Anyone who has ever played with "regen" circuits knows that a certain amount of black magic is involved in creating a stable and reliable set.

> **As he talked** I noticed he kept glancing at the meters on one rack and I could see them move in cadence with his voice. Red and green pilot bulbs glowed from several different sources. This was strictly big-time radio.
>
> – from 'Surviving Technology'

Vaughan describes going through scores of circuit iterations before he finally wound up with a receiver that lived up to his expectations. The schematic of this "ultimate" regenerative set is included in the book, as are suggestions for constructing it.

In addition to possessing an excellent memory and being adept at electronics, Vaughan was clearly a great storyteller. His writing skills are impressive and the photography is compelling. (He won a number of awards in this area and was the first Arkansan to be made a Fellow of the Photographic Society of America.) The book is printed on heavy, high-quality paper that nicely compliments the shots included here.

Reading "Surviving Technology" will transport you back to a time when life was simpler and more fun, at least in my opinion. Vaughan's book is a treasure trove — something that you will likely read more than once and savor with each rereading. I highly recommend it.

"Surviving Technology" was Vaughan's fifth published book. He was working on a sixth when death claimed him in January at the age of 91. The working title of the unfinished book was "Screw the Grim Reaper." Information on all of Vaughan's books were included in "Surviving Technology," including this (at the time) work in progress. Sadly, it will never be finished.

"Surviving Technology," published by Farmhouse Books, is available through the Vaughan's family website and also at the Electric Radio magazine website (visit *radioworld.com/links* for more).

James O'Neal is technology editor of RW sister publication TV Technology. He has written in Radio World about the technical contributions of radio figures like Jack DeWitt, Mary Day Lee and Reginald A. Fessenden.

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

Who Are the Digital Directors?

With new platforms proliferating, radio has a new breed of innovators

BY KEN DEUTSCH

The bad news is that because of the proliferation of new digital platforms, people no longer need a radio to hear news, weather and music. The good news? Radio can be heard on all of these platforms. Savvy broadcasters have come to see smartphones, iPads and other mobile media not as competition but as new ways to connect with listeners.

As a result, radio organizations now have a new breed of manager, one focused on "digital" concerns.

"Our goal is to enhance and grow the engagement level between our fans and our brands," said Tim Murphy, vice president for digital strategy, Entercom. "I work with the programming and promotions side of the house to drive ratings, and I work with our advertisers to develop ways to generate more leads for their businesses and create awareness of their brands.

Members of Emmis Marketing Group Indianapolis Malinda Lowder, designer and webmaster; Felicia Lahti, videographer; Larry Downes, director; Katy Smith, digital operations director; and Jordyn Byington, designer and webmaster.

Tim Murphy, vice president for digital strategy, Entercom

It's not like a new business has emerged; the core function of local media is the same. It's just happening on a multitude of platforms.

– Tim Murphy

"It's not like a new business has emerged; the core function of local media is the same. It's just happening on a multitude of platforms."

Those words do not sound like they came from a traditional broadcaster and, indeed, Murphy's background includes stints in packaged goods and the digital division of the New York Times. He has been at Entercom since 2008.

"We took a massive hit in the newspaper business," he said. "It shook our core assumptions about how media worked, and that was formative for me. And there are a lot of themes and concepts that are constant between newspapers and radio."

Murphy discovered that in newspapers as well as broadcast, consumers want their content to be available whenever and wherever.

"Our job is to grant that wish," he said. "If they want to consume us on their phone on a bus, or time-shifted on a train to Philadelphia, we must be nimble and adapt to that. So letting them know on Facebook when an interview or concert is coming up is just a part of that."

NEW WORLD ORDER

Murphy said that the average small business owner receives 20 to 35 pitches a month from various marketing solutions companies.

"Some of these are e-mail-based, there is the online Yellow Pages, and we have people out there who build social networking strategies. We in radio need to position our capabilities in light of this new competitive world," he said.

Murphy believes that accurate ratings metrics are finally a reality, and that this is a good thing.

"Text is to radio what the click was to Google. What I mean is that we can measure it and keep track of it. Because people can text quickly or go to the Web on their phones, it reduces the friction between advertisers and their potential customers. People must understand that we drive measurable, actionable outcomes."

(continued on page 21)

Bite Into Restaurant Promotions

How to create advertising that leaves listeners hungry for more

PROMO POWER

Mark Lapidus

The late great DJ Eddie Gallaher could make you hungry in just 30 seconds. Eddie had a knack for delivering an amazing read for a restaurant. I'm not sure if he dined at every place he endorsed, but he sure made it sound that way. And it wasn't just the food; the atmosphere was always outstanding.

Alas, the art of the restaurant read on radio may be behind us, but there are still many ways for you to obtain revenue and have fun with food. Let's explore how relationships with the kings of cuisine in your town can benefit your billing and boost your esteem with your listeners.

CHEW ON THESE IDEAS

For decades, Jerry's Subs & Pizza, based in Gaithersburg, Md., a Washington suburb, ran a "write your own coupon" promotion on the radio that was a huge favorite with hungry Beltway residents. Dana Siller, the gastric genius behind the concept, placed a media buy and offered a substantial discount to drive traffic to the stores.

iStockphoto/GOSPHOTODESIGN

Cheesy but effective: Radio makes food sound as good as it tastes.

The station's listeners loved it because it was simple. All they had to do was write down the station call letters on a piece of paper with the according discount and take it any Jerry's. The stations themselves liked it because of the ad buy and because it had listeners remembering to write down the call letters. While the written diary is history, it's still a good idea to have listeners remember whom they've been listening to and who rewards them for listening!

Many restaurateurs are entrepreneurs and are open to investing in sound conceptual marketing.

The keys to this promotion: The product has to be something people really want; the offer has to be at least 15 percent off the usual price; the time frame in which the offer is accepted has be limited so it creates demand; and every store must willingly and without question accept the deal when a listener presents the coupon.

Every radio station has an audience listening during major mealtimes — breakfast, lunch and dinner. Many a morning show team has chowed down on delivered food and sung the chef's praises while they describe what they are eating. Often, however, the missing element is the radio station sales department, which should be selling these restaurants either promotional time or actual spots.

The food itself is not enough of a payoff for the station to be giving up airtime. If the restaurant can't afford spots on the air, maybe a sponsorship on a website section would work better for them.

At noon, there are many ways to work in a lunch sponsor, but they all fail if they don't drive action to the place of business. Usually the mistake comes from airing generic reads for the restaurant. Instead, the copy should be updated with daily specials and offers for that day only. Example: "Today's '90s Nooners' features the best hits of the '90s and is brought to you by the Third Street Diner. Today the diner is featuring delicious gazpacho soup to cool ya down, and if you mention Q93, you'll get dessert free — that's from noon to 2 p.m. today only."

Lunchtime works well for office discounts, too, especially for places that deliver. If the offer is good enough and delivery is free, it's a fast way to move larger quantities of food. Example: "Charlie's Chinese has an office special today with free delivery of their lunch buffet with enough food for your entire office, up to 20 people. If you're the boss, treat the staff, or get your buddies together for an inexpensive great meal delivered to you."

Dinnertime is the right time for happy hour specials and romantic nights out. This is the where the previously described classic live read — or recorded endorsement — really rocks. Timing is everything with dinner, so start the spots about 4 p.m. to plant the seed and continue to air them until 7 p.m.

It is true that restaurants typically don't have deep pockets and they do rely on results, so it's vital to keep checking to be sure that what you're executing on-air is actually moving the product. The good news is that many restaurateurs are entrepreneurs and are open to investing in sound conceptual marketing.

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

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DIGITAL DIRECTORS

(continued from page 19)

Does Murphy think that this blast of new media options will settle down in the near future?

"I think settling down is gone. That concept no longer exists, and anyone who is thinking the industry will mature again is in for a rude awakening. The pace of change will only accelerate, and the thing that I really have hope and excitement about in the audio industry is that everything is moving to mobile. We are positioned well to exist in this mobile world."

NATIONAL AND LOCAL JOBS

While Murphy operates at the corporate level, digital directors are also found at local station clusters. Such is the case with Larry Downes, director of Emmis Marketing Group Indianapolis. Under his purview are four radio stations' promotions and digital operations.

"We have our own platforms, our website and our text stuff, all of which we can monetize," said Downes. "We use them to engage with listeners in ways we can't do over the air. Then we have other ways of getting the word out through the marketing side. This includes social media like Facebook, Twitter, Instagram and YouTube. It's harder to monetize those because they are someone else's platforms. We use them primarily to communicate with our audiences and entice them to use our platforms where we can generate revenue."

The Emmis cluster in Indy can be heard via iHeartRadio (*iheart.com*) and TuneIn (*tunein.com*), where visitors can hear streaming radio stations from all over the United States or create their own.

"We really want to make sure we're available wherever people are looking for us," said Downes. "Whatever we have online, we want to be accessible in a mobile version. The best thing we can do is be available and discoverable any way people want."

Downes has a staff of five helping to manage his sites and social media, and there is also one person who focuses on digital sales. But where does one go to find people with these skills?

"My staff is entirely people who have no radio background," said Downes. "Our videographer is just out of school. Our designers have graphic arts backgrounds. We have them spend a lot of time in our promotion and sales meetings learning the business. Translating radio to what they do has not always been easy."

Some of the people applying for jobs in the digital domain at Emmis are freelancers seeking a more stable environment.

"We don't want to turn skilled people into mediocre managers," said Downes. "Everyone wants a straight career path but there isn't one anymore."

Downes stressed that broadcast radio is still the heart of the business at Emmis.

"Nothing I've been talking about, video, social media, makes any difference if you don't have a good on-air product."

'MOUSE HOUSE'

Disney has been known for its innovations in film and television; and its radio business is no different. With a combination of terrestrial affiliates from New York to Burbank, Calif., and Internet operations spanning the globe, Radio Disney is a network that uses multiple digital channels to stay in touch with its target audience of very young people.

Pictured are Ivan Heredia, vice president of marketing at Radio Disney; Lauren Devillier, vice president of digital media, Disney Channels Worldwide, seated; Alyssa Talovic, director of digital marketing, Radio Disney; and Jason Byers, senior manager, product management, Disney Channels Worldwide.

> **We track** where our audience is now, and where they are headed. We are constantly updating in response to what our consumers are looking for.
>
> – Lauren Devillier

Communication is a two-way street for this station through its website (*radiodisney.com*), the Radio Disney app and social networking. With features such as on-air requests, voting for the Radio Disney Music Awards, N.B.T. (Next Big Thing) and Music Mailbag, listeners get to express themselves.

"Giving kids a voice is critical," said Lauren DeVillier, vice president of digital media at Disney Channels Worldwide. "It's the underpinning of what we do in that space. We track where our audience is now, and where they are headed. We are constantly updating in response to what our consumers are looking for."

There have been more than 4 million downloads of the Radio Disney App; there are 860,000 followers on Twitter and more than a million fans on Facebook. Only by utilizing these mobile aspects of Radio Disney could the company move quickly when needed.

"We had a last-minute opportunity presented to us to feature (teen singing group) Fifth Harmony live at Disney World in Orlando in support of their participation in N.B.T.," said Ivan Heredia, vice president of marketing, Radio Disney. "With only 48 hours to get the word out, we turned on the entire Radio Disney machine. That included a live call-in on the air with the group, posting a blog and promoting the event across all our social media platforms. The group's record company, Epic, expected several hundred guests to show up for the concert but we had had thousands of screaming fans there."

DIGITAL CAREERS IN RADIO

Heredia's career is typical of many digital directors in that he didn't come from a pure radio background. He moved from promoting records to becoming vice president of marketing, Radio Disney.

In a mature industry like radio, where job cuts frequently make headlines, digital and mobile platforms are becoming a bright spot for employment. And to be considered for these jobs, Radio Disney's Lauren DeVillier listed the main qualifications: "Understanding the digital marketplace will help move your career in the direction our consumers are already headed. You just have to have a little expertise in application development and a passion for the product."

Ken Deutsch, a regular Radio World Contributor, owns a digital watch. You can reach him at ken@kendeutsch.com.

BW BROADCAST LAUNCHES REMOTE APP

BW Broadcast says its new Ethernet Remote Control App allows users to manage their transmitter(s) from anywhere there's an Internet connection and also now from any device, including smartphones and tablets.

Users can adjust settings remotely — changing the MPX source, swapping audio input from digital to analog, adjusting pre-emphasis and changing between the 15 processing presets — all from the comfort of an office or home.

This embedded Web server has secure access controls, giving peace of mind that only chosen personnel will have access to a facility.

A series of configurable alarms and triggers provide alerts for issues such as power, frequency or audio changes and can offer a solution to keep the transmitter on the air. For example, it can be configured to switch on backup audio or backup transmitters should it detect a problem.

It also keeps a comprehensive log of all information should further investigation be required.

BW Broadcast says that its V2 transmitter's embedded Web server and the remote app are simple and intuitive to use and are scalable from management of one to 100 transmitters. A demo can be found at *www.bwb.fm/v2demo*.

For information, contact BW Broadcast at (866) 376-1612 or visit www.bwbroadcast.com.

DAVICOM RELEASES APP FOR IPHONE AND IPAD

The Dav2You is intended to provide site information when and where it is needed. According to Davicom, on the road, at the office or at the site, Dav2You will connect to any Davicom DV-208/216/DV-Mini unit and get critical site information within seconds, within Apple's iOS environment.

With its custom view screen, Dav2You displays information from all configured sites. Relevant parameters such as antenna power, room temperature or other useful data can be added to the custom view screens.

Site status is provided in the Dav2You interactive map. The site's icon color gives an indication of any problem. Touching the icon on the map gives access to the site's parameters.

Davicom highlights the ease of acknowledging alarms. When the hardware detects a problem at the site, it sends a notification to Dav2You. A tap on the received notification opens the alarm acknowledgement dialog box and allows confirmation of alarm reception.

The manual command wizard removes the need to key-in strings of commands.

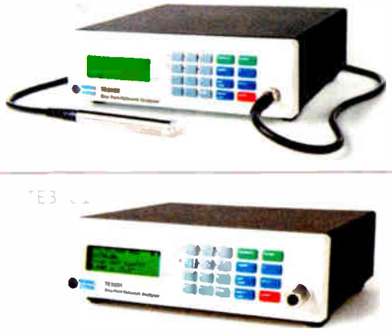
Dav2You can generate reports of the events received from configured sites and filter these events by date, name or description, then print the report or forward it by email.

The built-in email support function contacts Davicom directly, automatically attaching relevant site information and version numbers.

The app works with Davicom-Mini or 208/216 units running firmware version 5.50 or later.

For information, contact Davicom in Quebec at (418) 682-3380 or visit www.davicom.com.

LBA INTRODUCES IMPEDANCE ANALYZER AND NETWORK ANALYZER



LBA Technology Inc. now offers the new TE-3000 impedance analyzer and TE-3001 network analyzer to customers in North and South America. This series, the successor to the TE-1000, brings additional features and problem-solving capabilities to the engineering toolbox, the company says.

Both models use the same core computational engine with an expanded frequency range of 0.03 to 300 MHz, improved accuracy, display format options that are more than doubled and additional utilities. The units offer a time domain reflectometry (TDR) feature, and the ability to provide a secondary function as a spectrum analyzer.

The TE-3001 adds an additional 20 dB of RF immunity and is supplied with an N type male connector interface for standard network analysis. The TE-3000 has an active probe and an N type adaptor is supplied. The TE-3000 can be used on RF system lines and antenna systems. The TE-3001 is suitable for network analysis on electronic circuit boards. Both models can sniff out cable faults.

These portable, battery-powered lab-quality instruments weigh about 4 pounds, provide an easy-to-use software interface for PCs and come with a rugged aluminum transit case.

For information, contact LBA Technology in North Carolina at (252) 757-0279 or visit www.lbagroup.com.

DIGITAL ALERT SYSTEMS DASDEC IS MULTIMISSION

Digital Alert Systems says that its DASDEC emergency messaging platform offers a combination of features and functions that go beyond the scope of FCC and FEMA regulations to provide a cost-effective means of managing EAS and CAP across one or more stations, from any location. The DASDEC serves as a platform for all levels of emergency messaging and station integration.

Built on an IP-based architecture, the modular DASDEC system eliminates many software and hardware constraints while making updates a simple. The unit enables remote operation via any standard Web browser and further streamlines connectivity and operations by supporting a wide range of third-party switching while enabling integrated network links with a variety of station automation systems.

Combined with options such as DAS' MultiStation software for management and logging and the MultiPlayer four-channel EAS audio player and program switcher, the DASDEC provides five complete and discrete channels of EAS/CAP compliance coverage in three rack spaces — yielding the lowest cost-per-independent stream for EAS/CAP coverage, the company says. Meeting EAS requirements of multiple program streams, the MultiPlayer eliminates one-channel-at-a-time limitations by providing completely independent EAS analog or AES switching, playout and control of up to four additional and independent program streams. Further, the MultiPlayer provides GPIOs for each channel, making facility integration quick and easy.

For information, contact Digital Alert Systems in New York at (585) 765-1155 or visit www.digitalalertsystems.com.

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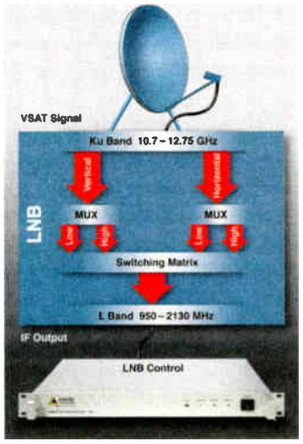
NARDA ADDS OPTIONS TO NRA LINE



Narda Safety Test Solutions has added two options to its NRA line of remote spectrum analyzers.

The "Scope and I/Q Data" option allows for NRA-3000 and NRA-6000 analyzers to continuously record signal characteristics versus time. The frequency resolution can be set between 100 Hz and 32 MHz. The time resolution can be set down to 31.25 nanoseconds. The analyzers also output "online" the raw data separated into its real (in-phase) and imaginary (quadrature) components.

The LNB Control option (pictured) for the NRA-3000 generates all of the control voltages for switching the LNB to low band or high band and horizontal or vertical polarization. Narda says that those voltages can be increased if necessary to compensate for cable losses. Remote operation of the LNB Control is integrated into the standard command set of the analyzer. Narda explains that no additional equipment needs to be involved in the control software or the signal path.

Narda's 1 RU remote spectrum analyzers cover a frequency range from 9 kHz up to 6 GHz with resolution bandwidths from 100 Hz to 32 MHz depending on the device type. They can be integrated into any measurement environment thanks to their Ethernet interface and plain text ASCII remote control commands, the company says. Transmission of large quantities of data can be done in binary format. The application-oriented operating modes are: Spectrum analysis, power measurement of channels simultaneously, level measurement with RMS and peak values and recording the signal characteristic versus time.

For information, contact Narda Safety Test Solutions GmbH in Germany at 011-49-7121-97-32-0 visit www.narda-nra.com.

42NET AUTOMATION ALSO MONITORS

The latest version of the 42Net radio automation suite, 42Net i 2.0, includes 42Net RMC, a resident monitoring program. One of the goals of 42Net has been the continuous monitoring of the broadcast signal's volume and loudness settings through any 42Net-equipped workstations on the IP network without the need of a direct audio connection.

42Net RMC can monitor levels of all programming within a media asset management system and apply loudness controls to programs as they are played out. Users can define rules according to specific categories such as commercials, songs, news or magazine programs.

An advantage of software loudness processing is that it can react faster than a hardware processor. It can also be more accurate than hardware and eliminate material that might trip false alarms in silence sensors.

The 42Net i 2.0 also allows for 24/7 monitoring of the master output or the sub channel volume from any 42Net workstation. Latency delay is minimal in these monitoring duties. A color GUI reflects the performance log and programmed settings. Violations of settings will send an alert notification via email or SMS to designated personnel.

42Net also makes hardware that can be used for remote applications. The X-Link Pro IP codec's rear-panel RS-232 port can be used as a machine control for compatible equipment when installed at a remote site. 42Net says that besides some broadcast equipment it could be used to operate mundane items such as a UPS, air conditioning system or similar facility equipment. The company notes that it has a client that uses an X-Link to turn an inductor on and off at a remote site.

For information, contact 42Net in Hungary at 011-36-1-300-73-73 or visit www.42netmedia.com.

BROADCAST DEVICES OFFERS RF POWER MEASUREMENT/MOTORIZED SWITCH CONTROLLER

Broadcast Devices says that the SWP-200-1R1 system is the industry's only integrated RF switch controller/RMS power meter/remote control package.

The system manages RF switches, measures RF power and acts as a web remote control. Control up to two switches and RF power meters in a single package.

The SWP-200-1R1 series is a universal motorized switch controller that works with all motorized or solenoid-driven switches available. The system manages transmitter interlocks and on/off functionality. The SWP-200-1R1 provides hot-switch protection which prevents switch movement with RF present. The system provides automatic transmitter changeover in the event of an RF failure.

The DPS-100D power meter supplied with the SWP-2001R1 provides protection of the RF path. The BDI proprietary three strike algorithm allows definable reflected power trip points. An alarm point can be set to provide email early warning of a developing problem and when a second higher threshold is met the system will provide open interlock action to shut the transmitter down if a sustained high reflected power condition exists. The BDI DPS-100D power meter is a true RMS type system suitable for analog and digital broadcast formats. Accuracy is rated at ±5 percent of reading.

The system's remote control capabilities are the only remote control needed. The provided Web GUI provides Web control of switch position, selected to air transmitter on/off function, fault reset and indications of forward/reflected power and optionally, temperature and line pressure.

For information, contact Broadcast Devices in New York at (914) 737-5032 or visit www.broadcast-devices.com.

RTW RELEASES MEASUREMENT LOGGER

RTW says that its LQL (Loudness Quality Logger) is a new tool for logging, true peak data analysis and reporting, compatible with the company's TMR7, TM7 and TM9 TouchMonitor line of products. The LQL license (SW20014) is an extension of RTW's range of software options for the 7- and 9-inch line of TouchMonitor audio meters.

LQL enables data to be derived directly via an IP connection from a compatible TouchMonitor audiometer, as well as from external storage media such as a USB stick. Also included in the software are dual limit weighting, status information, marker and various other reporting features. The new PC software is free of charge to users; however, the SW20014 LQL license is required to enable a TMR7, TM7 or TM9 series meter to be compatible with data export and additional display functions.

The TM7 and TM9 series TouchMonitors, which include the MagicLRA loudness range module, feature a 7- and 9-inch touch-sensitive display, respectively, and provide flexibility and modularity combined with intuitive control, RTW says. The software can handle multiple sources simultaneously.

Both monitors support displaying the same signal on multiple instruments in parallel, each with dedicated defaults with both horizontal and vertical operation. TM7 visualizes up to 40 sources at the same time, while the TM9 visualizes up to 48 and the TMR7, designed for radio broadcasting, visualizes up to four.

Various audio interfaces and combinations are available, i.e. analog, AES3, AES3id or 3G-SDI. RTW's TouchMonitor range was created to help adhere to major industry loudness standards including EBU R128, ITU BS.1770-3/1771-1, ATSC A/85 and ARIB.

For information, contact RTW International in Pennsylvania at (877) 938-7221 or visit www.rtw.com.

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AUTOMATION EQUIPMENT

WANT TO SELL

It's free and it has been expanded. The only cost is to keep us informed as to how the system is performing and let us know how you are using it. DIY-DJ, is a Linux based radio automation system and now sports a record scheduler (DIY-DJ-RECORDER) which allows you to schedule the recording of a network or any other program for replay later as well as a basic logging system. Beside these additions the system schedules music, does voice tracking (ALWAYS hit the vocal), create a shell, live assist, exact time events, join satellite feeds, automated temperature announce, do unattended remote events and more. Call (406) 679-0527 or email krws@digitaldevelopment.net for a copy today.

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Wanted: old analog automation equip, filters and EQ, tube amps, reel to reel, cart machines and parts. Pacific NW area. 503-493-2983.

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WANT TO SELL

1934 RCA 77A double ribbon microphone, originally used by Arthur Godfrey at WFBR Baltimore. 100% perfect condition. Contact Bill Cook, 719-684-6010.

WANT TO BUY

RCA 77-DX's & 44-BX's, any other RCA ribbon mics, on-air lights, call after 3PM CST, 214 738-7873 or sixtiesradio@yahoo.com.

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WANT TO SELL

Radio broadcasts of Major League Baseball, NFL, and some college football games that are on cassette tapes, approx 100 to 125 games, time period of entire collection os from the 1950's – 1970's, BO. Must purchase entire collection. Contact Ron, 925-284-5428 or ronwtamm@yahoo.com

WANT TO BUY

Collector wants to buy: old vintage pro gears, compressor/limiter, microphone, mixing consoles, amplifiers, mic preamps, speakers, turntables, EQ working or not, working transformers (UTC Western Electric), Fairchild, Western Electric, Langevin, RCA, Gates, Urei, Altec, Pultec, Collins. Cash - pick up 773-339-9035 or ilg821@aol.com.

2" plastic "spot" reels 6.5 or 8" diameter, as used for quad video. Wayne, Audio Village, 760-320-0728 or audiovlg@gte.net.

Equipment Wanted: obsolete, or out of service broadcast and recording gear, amplifiers, processing, radio or mixing consoles, microphones, etc. Large lots preferred. Pickup or shipping can be discussed. 443-854-0725 or ajkivi@gmail.com.

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

I'm looking for San Francisco radio recordings from the 1920's through the 1980's. For example newscast, talk shows, music shows, live band remotes, etc. Stations like KGO, KFRC, KSFO, KTAB, KDIA, KWBR, KSFX, KOBY, KCBS, KQW, KRE, KTIM, KYA, etc, I will pay for copies... Feel free to call me at 925-284-5428 or you can email me at ronwtamm@yahoo.com.

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

Looking for KTIM FM radio shows from 1981-1984 if possible unscoped. R Tamm, 925-284-5428 or ronwtamm@yahoo.com.

RECEIVERS/ TRANSCEIVERS

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American Made SCA Decoders, 417-881-1846.

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Large or small collections of 16" transcriptions or 12" transcriptions, not commercial LPs. Bill Cook, 719-684-6010.

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Donations Needed: All Volunteer, Non-profit Low Power community radios stations need Equipment. Will offer tax deduction letter, You determine donation value, We will pay shipping. Equipment shared between three Wisconsin stations. Looking for Mics, Mixers, field equipment, etc. You name it. Email: Dan@WIECradio.org.

TRANSMITTERS/ EXCITERS/TRANSLATORS

WANT TO SELL

CCA AM 10,000 D – Call John KQSS 928-595-0263 between 10 & 6 PM Pacific Time.

CCA 500D AM xmtr 1960's vintage, PCBs removed, $250/BO. David Kelly, KTCH, Box 413, Wayne, NE 68787.

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New AoIP Standard Is But the Next Step

Ten years on, reflections about the growth of audio over IP as used in broadcasting

COMMENTARY

BY MARTY SACKS

Marty Sacks

It's hard for us to believe that audio over IP has been powering radio facilities for 10 years. As the first company to launch the technology, we can tell you that it's been both a very busy and a very cool time.

The use of AoIP in the broadcast facility was the brainchild of Steve Church. He saw how voice over IP was changing corporate America's approach to telecommunications and realized that Ethernet switches optimized for VoIP (which had non-blocking backplanes to prevent data packet loss during intense use) made them perfect for moving real time audio around a broadcast facility.

Steve and our R&D team realized that one key issue standing between these switches and AoIP was timing. The original Ethernet standard (IEEE-802.3) did not have timing synchronization. Without sync, mixing audio packets from different parts of the facility would be difficult, if not impossible.

Our team devised a way to create and distribute a master clock inside Ethernet, so that all the packets were synchronized. This was just the first of many hurdles we crossed to create a commercially viable system.

EARLY ADOPTERS

Our first customers were the true pioneers, though. Early adopters are known for taking risks, doing so because they believe in the power of something others are scared of. Those adopters recognized the potential of the new technology, and saw that it would propel their projects to completion faster, better, and with less expense.

Sure, they also realized that backing something so new imparted risk to their reputations — but they believed that the upside outweighed the risks.

One of these early adopters was Mark Stennett, vice president of corporate engineering at Univision Radio. Recently, Mark reminded me of his time installing some of the very first Axia gear, in Austin, Texas. Risky? At the time, sure — but now he's regarded as a visionary.

Mark went on to install AoIP in many of the Univision stations, including their very large facility in Houston.

In those early days, Axia folks ate a lot of airport food, traveling far and wide to teach about the tech. They held one-on-one sessions, and spoke at NAB, AES and SBE events. Unlike previous products that changed our industry, AoIP integrated more deeply into the broadcast plant than any of our earlier innovations, and it took a lot of education to help people allay their concerns. (At the same time, a few competitors worked night and day to scare people away from the tech, too. Funny thing: the naysayers now sell their own AoIP products!)

WHERE WE'RE GOING

Today is perhaps the most exciting time in the history of AoIP. More than 4,500 Axia IP consoles and 53,000 AoIP devices are installed worldwide (and the number increases every day). More than 50 partners build products that connect directly to Axia networks, serving broadcasters every day. Thousands of broadcasters have been freed from the mazes of wiring and dozens of different connector types that once infested

(continued on page 30)

WAY(FM) in Nashville is among those putting AoIP technology to work.

ADVERTISER INDEX

This listing is provided for the convenience of our readers. Radio World assumes no liability for inaccuracy.

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Radio World Talkback

Comments shown were posted by readers to stories that appear at radioworld.com.

Courtesy James O'Neal

"The teletype sound used by KYW, last I heard in the late 2000s, sounded like it was a Model 14ROTR or 14TP piped through a 3.5 kHz phone line. Having seen on YouTube clips of both machines in action, I can tell the difference in sound among them, the venerable Model 15, and the newer Model 28."

— on "Clack-Clack-Clack-Clack-Clack," radioworld.com, keyword Clack

*"Part of the problem here is that *anyone* who disagrees with the prevailing industry 'wisdom' is tarred as a 'hater,' 'naysayer,' or 'Luddite.' After years of suggesting constructive solutions that don't pass arbitrary muster, are you actually surprised that this level of frustration exists? I'm coming to NAB in April and hope I'm not ostracized just because I may speak uncomfortable truths."*

— on "AM Screed Drowns Out Message," keyword Screed

"The LPFM window is an opportunity for real community radio to take command of the airwaves and bring relevant broadcasting to thousands of people around Puget Sound. Thanks to Brown Paper Tickets for assisting."

— on "Puget Sound Nonprofits Plan for 15 LPFMs," keyword Puget

"Great article, Michael [LeClair]. It's been so long ago that I had to manage ISDN that I had forgot about some of its little quirks. (Some call it 'Oldtimer's'). The Internet has sure changed that business of broadcasting."

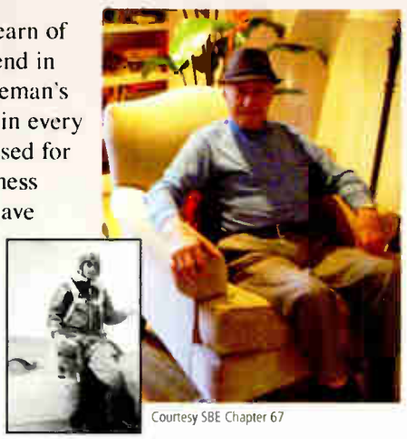
— on "The Grand Transformations of IP Audio," keyword LeClair

"AI, thanks for your AES update. I could only spare one day for the convention, the 'Maintenance, Troubleshooting and Repair' was absolutely the highlight of the workshops that I attended too. Great presenters with plenty of useful little tips and interaction from some other engineers in attendance. Would love to see more workshops like this one next time around, thanks for mentioning it here!"

— on "Weekend in New York," keyword Weekend

"I was shocked and saddened to learn of Doc's passing. He was truly a legend in the broadcast industry and a gentleman's gentleman. He was a professional in every sense of the word. I feel truly blessed for having the opportunity to do business with him at WQXR, and later to have worked with him at Northeast Broadcast. I always considered him a genuine friend and will miss him greatly."

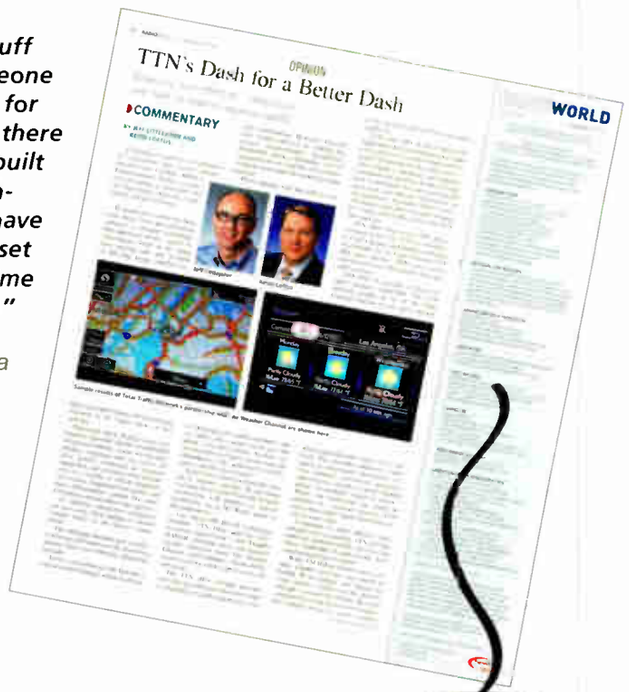
— on "'Doc' Masoomian Passes," keyword Masoomian



Courtesy SBE Chapter 67

"With all this good stuff going on, would someone please explain to me, for the love of God, why there are no atomic clocks built in today's radios/dashboards? Why do we have to physically need to set the clock time after time after time after time?"

— on "TTN's Dash for a Better Dash," keyword TTN



"I have done work with DSP-based AM radios. The results are spectacular! The next generations of AM radios will be the best ever."

— on "For Glogowski, AM Still Booming," keyword Glogowski

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OPINION

AM Efforts Should Include Tech Solutions

Revitalization attention is welcome; DRM should be considered too

COMMENTARY

BY PAUL THURST

The effort by at least two FCC commissioners to do something about the lagging quality of the AM broadcast band is laudable. Since the subject was broached before the spring 2013 NAB, many ideas on exactly how to make a meaningful improvement to the AM band have been put forward.

The FCC is currently circulating a NPRM on the subject, which includes the following basic ideas:

1. Open a one-time filing window for AM license holders to acquire an FM translator.
2. Relax community coverage rules for AM licensing, allowing greater flexibility for transmitter siting.
3. Eliminate the "Ratchet Rule" used in nighttime allocation studies for new facilities.
4. Permit more widespread use of modulation-dependent carrier level technologies by eliminating STA requirements.
5. Reduce minimum field strength requirements by 25 percent, allowing the use of shorter towers.

Those proposals may indeed save an AM license holder some money, but none of them do anything to improve the technical quality of AM broadcasting.

Placing electrically short towers further away from population centers will reduce signal levels. MDCL will also

Paul Thurst

reduce signal levels somewhat, depending on how aggressively it is used. Since one of the main technical flaws with AM broadcasting is the prevalence of electrical interference, taking steps to further reduce signal strengths over population areas seems counterproductive.

Some people have been excoriated for pointing this fact out. Sorry, it is beyond unhelpful to say nothing. Rather, I would posit that the industry regulators might want to know exactly what they are doing before they change the regulations.

NO PROPRIETARY SOLUTIONS

One simply has to look at the history and the current state of the AM broadcasting band for an example of what effect technically flawed regulatory decisions can have.

The use of FM translators to simulcast AM stations is not necessarily a bad idea, especially when it comes to Class C and D stations that have little or no nighttime coverage. In those situations, the increased service to the city of license would be a good outcome.

Reducing costs for AM broadcasters is generally a good idea, but it is not synonymous with saving the AM broadcast band.

Of the three, MDCL is reversible, whereas poor transmitter siting and short towers are more likely permanent flaws in a station's technical facilities.

These ideas were first put forward in 2009 by the Minority Media Telecommunication Council as a rescue plan for radio. Reducing costs for AM broadcasters is generally a good idea, but it is not synonymous with saving the AM broadcast band.

The other idea that is being talked about is the conversion of the AM band to all-digital HD Radio. While some type of digital radio may be inevitable, there are some serious issues with iBiquity's HD Radio. It is proprietary and will remain proprietary in the foreseeable future.

If broadcast station licenses are indeed a trust granted in the public interest, how can one company, by way of controlling patents, control all radio broadcasting transmissions within the country?

If all-digital transmission is seriously being considered as a way to improve the AM band, other technologies should be investigated. DRM (Digital Radio Mondiale) has been in development in Europe since the early 1990s and is specifically designed to fit into 9 kHz channel spacing without creating copious sideband interference. Further, DRM is non-proprietary. Since so much hangs in the balance, would it make sense to at least test DRM and compare it to the HD Radio test results?

Paul Thurst is a broadcast engineer with 25 years' experience working in the greater New York area. His blog is www.engineeringradio.us.

Comment on this or any story. Email radioworld@nbmedia.com *with Letter to the Editor in the subject line.*

AOIP

(continued from page 28)

broadcast plants, saving millions of dollars in supplies and labor.

We've partnered with another AoIP company, Ravenna, from ALCNetworx, allowing even more broadcasters to enjoy AoIP; products from more than 70 manufacturers now work together seamlessly on AoIP networks.

So what's next? Axia's logo may be a crystal ball, but we can't see the future. We can, however, make some educated guesses. You've probably heard that a new standard, AES67-2013, has been ratified with the intent of enabling interoperability between AoIP equipment providers. With this critical standard in place, it's easy to foresee a day in the near future when interfaces between networked and non-networked broadcast gear are a thing of the past — *everything* will finally be networked. Just imagine: Any broadcast device you might wish to add to your studio network will be literally just a click away. Is it possible you've already soldered your last XLR connection?

Yes, the state of the art has come a long way in the last 10 years. We're proud of what's been accomplished, and we're excited when we realize that there is more, even cooler stuff on the horizon. To quote Steve Church: "Onward!"

The author grew up in radio, beginning as an engineer at WPGC(FM) in Washington in 1976. He is vice president and executive director of the Axia Audio division of The Telos Alliance, which he joined in 1999.

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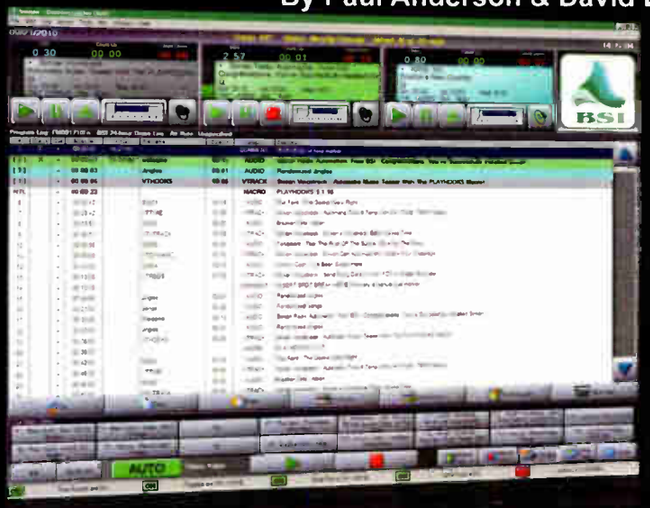
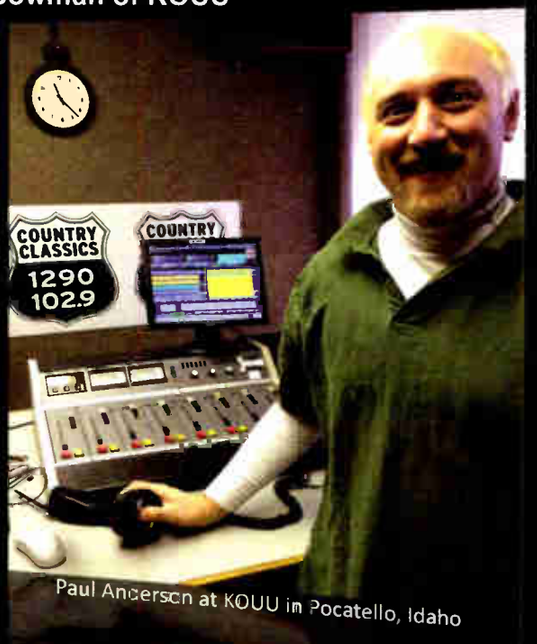
Streaming Made Simple! With Simian 2.2 Pro & Lite

By Paul Anderson & David Bowman of KOUU





Paul Anderson at KOUU in Pocatello, Idaho

Idaho Wireless Corp is a small market group in Pocatello, Idaho, and we're the only independently owned and managed radio group left in our market. As technology evolves we evaluate the costs and benefits of each change, and streaming was one of those projects.

When we changed the format January 1st on our 50,000 watt AM KOUU to Country Classics the response was immediately positive, but our audience wanted to listen in their offices and on their smart phones. We had considered streaming KOUU in the past, but the expense and complexity meant it was always a project that got pushed back to "later".

In 2009 we installed our first Simian system, replacing a beloved but tired Scott Studios system. We were ready for the benefits of a Windows based system that had more features, and we found that Simian is easy to use, powerful, and installation was a breeze. Since then we've converted all of our stations from Scott to Simian.

Simian offers many options to set up streaming. Country KOUU audio streaming is being outsourced to a third party (Crystal Media Networks) using data provided by Simian. Using the Metadata tab in Program options is where all the set up takes place. Crystal Media Networks required certain parameters to interface with their streaming player. The majority of the setup is all contained in an .xml file.

To create an .xml file, use Notepad and type in the syntax for each parameter required by the streamer (Syntax for Artist is <artist><![CDATA[%ARTIST%]]></artist>). Simian support can help with this, or a template is pictured in the Simian Pro Manual. In the case of KOUU, Artist, Title, Filename, Category, and Length of each piece of audio was provided to Crystal Media Networks. This file becomes the Template File.

Some final setup is required. The template file is loaded in the Metadata tab in Program Options in Simian. The IP Address corresponds to the computer that will be accessed by the streaming software. This computer needs to be networked to the on air Simian computer. The port and TCP/UDP address is set up with information provided by the streaming company (in the case of KOUU, Crystal Media provided this information).

All of the programming for KOUU is played by the Simian Pro system. In order to stream with more than one source (i.e. switching from local audio to network audio like a satellite receiver) Data Repeater-available from BSI-can handle multiple metadata sources and destinations.

Our streaming project for KOUU was easier than we imagined. The support team from BSI and the streaming features of Simian made it simple.

Paul Anderson is the General Manager of KOUU, KZBQ and KORR. David Bowman is the Operations Manager. KOUU uses Simian Pro, though the metadata output features of Simian Pro are also available in Simian Lite. Simian Pro & Lite contain built in metadata output templates for Windows Media Encoder, ShoutCast, IceCast, SAM Cast, Live365, Orban Optimod, and Omnia A/XE. Metadata output in Simian Pro & Lite is template based, so most stream encoders not listed are compatible.

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