

RADIO WORLD

Your guide to radio technology

radioworld.com | July 5 2023 | \$5.00

The background of the advertisement features a grid of four colored quadrants (green, blue, yellow, red) with stylized radio towers and concentric circles representing signal waves. The text is overlaid on this background.

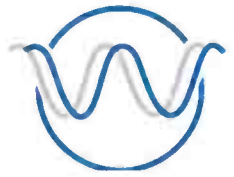
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The FCC continues to work its way through newly updated state plans.

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FUTURE US, INC.

Future US LLC, 130 West 42nd Street, 7th Floor, New York, NY 10036



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Radio World (ISSN: 0274-8541) is published bi-weekly with additional issues in February, April, June, August, October and December by Future US, Inc. 130 West 42nd Street, 7th Floor, New York, NY 10036. Phone: (978) 667-0352. Periodicals postage rates are paid at New York, NY and additional mailing offices.

POSTMASTER: Send address changes to Radio World, PO Box 1051, Lowell, MA 01853.



Future plc is a public company quoted on the London Stock Exchange (symbol: FUTR)

www.futureplc.com

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L&R gets going

LeClair and Read launch an engineering firm



Paul McLane
Editor in Chief

R

adio veterans Michael LeClair and Aaron Read have formed an engineering consulting business, L&R Broadcast Services LLC.

Together, the duo brings decades of broadcast experience to the table. LeClair is the former chief engineer of WBUR(FM) in Boston and was the founding technical editor of Radio

World Engineering Extra. Aaron Read is the chief engineer of The Public's Radio 89.3FM, formerly Rhode Island Public Radio.

"We plan to offer a wide range of services, including regular maintenance and repair contracts with retainer, technical integration for studio and transmitter sites, consulting on studio designs, either for upgrade or new buildout, and just about anything needed on the technical side of broadcasting," Michael told me in an interview.

The duo says that the demand for radio project work is picking up as we exit the pandemic era, though at many of the largest groups, the recent rapid increase in interest rates had a negative effect.

"Ironically, this has created a better environment for smaller station operations, especially those with little debt, to invest in growth and upgrades," Michael said.

They are getting a lot of inquiries about studio integration projects in the noncom sector, and they also sense demand for small-studio projects out in the wider world of audio — what Aaron calls "podcast and podcast-adjacent work."

At a time when good engineering services are a treasured commodity, such new ventures are welcome. "Many of our stalwart engineers are now well past the age of 65 and are seeing there might be more to life than constantly being on-call to track problems 24/7 with little to no break," Michael said. "Even in large population areas it can be difficult to find someone to do broadcast engineering work at all. Say what you will about the future, broadcasters remain an important industry and their needs in the engineering realm are still very real."

You can read my interview with them, including their thoughts on the long-term outlook for the engineering profession, at radioworld.com, search "L&R." Their website is www.landrbs.com.

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Alpha Station Deploys RadioGPT

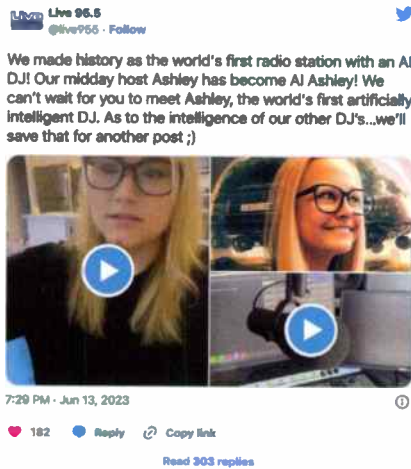
Alpha Media said it put Futuri Media's artificial intelligence software RadioGPT on the air at one of its stations.

KBFF(FM) in Portland, Ore., integrated an AI/synthetic version of its midday host, Ashley Elzinga, to "bring a new style of content to their listeners," the company announced.

RadioGPT has been the focus of much attention in radio since Futuri announced it this winter. Alpha Media had said it was exploring the tool but until June had not publicized its use on the air.

Station Content Director Dylan Salisbury was quoted by Futuri saying he was "ecstatic" to see the technology in use. "We have been working hard to ensure that AI Ashley is just as live, local, engaging and entertaining as the traditional version, and I can't wait for our fans to hear both versions of Ashley in action," Salisbury said in the press release.

Alpha Media EVP of Content Phil Becker said integrating AI versions of hosts into their programming will "improve processes and optimize the use of our talent."



"Adding AI to operations will allow us to be more agile than ever," said Becker. "Radio GPT allows us to showcase our content creators in more instances, with more frequency, and curate more timely, topical and robust information for Alpha audiences and clients than previously possible."

RadioGPT combines GPT-3 technology with TopicPulse, an AI-based discovery and social content system, and AI voice synthesis to provide content localized for a given market or format.

Comments on the station's Twitter feed were mostly negative. "You have totally disrespected the radio profession. You made history for all the wrong reasons,"

wrote one person. Another posted, "Why would any listener anywhere prefer this for literally any reason? Real DJs or nothing."

But another wrote, "You have to understand the benefit of this technology to local radio stations. As a station owner or programmer, you want to give your listeners good content and do it consistently. Finding people who can and want to do that isn't that easy."

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Writer



Randy J. Stine

Radio World's lead news contributor wrote about RadioGPT in April.

The FCC process to OK EAS plans is a lengthy one

Monitoring assignment rules have slowed authorizations

The Federal Communications Commission is working its way through its stack of state EAS plans, but the pace of approvals is slow.

Prompted by Congress, the commission in 2021 implemented some changes in alerting policies, one of which requires State Emergency Communications Committees to meet at least once a year and to submit an updated EAS plan annually.

Last year was the first time that SECCs submitted full plans using the commission's Alert Reporting System, or

ARS, an online filing platform. They were required to do so by July 5, 2022, but almost a year later some had still not done so, and the FCC had approved only 15 plans.

"We always anticipated that we may be working with many SECCs during this review process to ensure that their state EAS plans meet all the required elements," an FCC spokesperson told Radio World.

The plans, which govern EAS operations and activation procedures in the respective states, are designed by SECCs. They feature various methods of EAS message distribution, but all must include a monitoring assignment matrix,

Emergency Alerting

Right
The cover of the
30-page Michigan
plan.

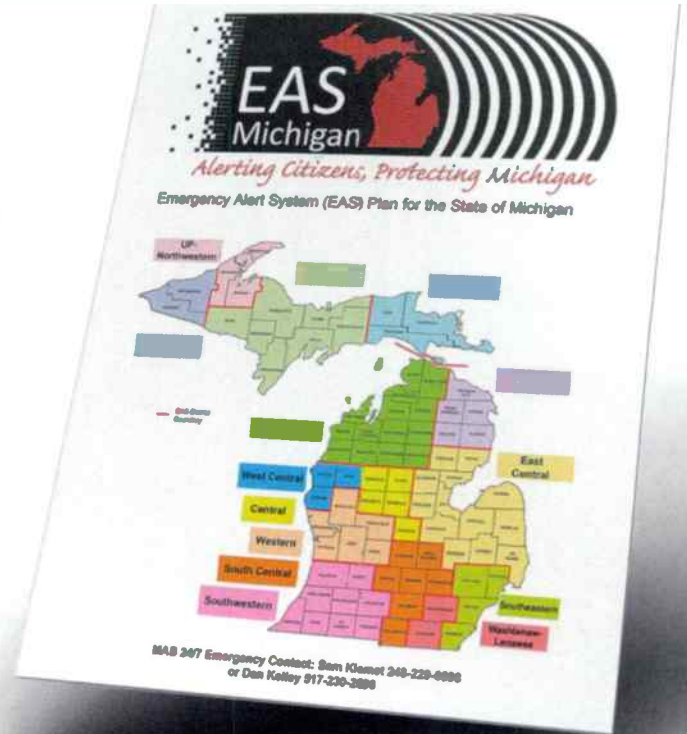
clearly showing monitoring assignments and the specific primary and backup path for the National Emergency Message, according to the FCC.

Redundancy theme

Since last summer, staff in the Public Safety and Homeland Security division have been scrutinizing the plans submitted by the states, Washington, D.C., and four territories. The FCC was required by Congress to accept or reject these plans within 60 days of the filing deadline.

As noted, not all states filed by the deadline. And many SECCs "needed to make substantive changes to their plans in order to comply with these rules, and that process is underway," a spokesperson said.

A sampling of comments from state EAS chairs indicates that the issue cited most often is the requirement for two independent paths for the EAN to reach each EAS participant in the state. And the commission spokesperson said, "The most common feedback we're providing concerns SECC compliance with the new monitoring assignment rules, including satellite monitoring. Staff is working closely with SECC representatives as they prepare



“The bureau recommends that EAS plans, whenever possible, minimize the number of intermediate links for EAS participants to monitor [EAN] sources.”

to submit new plans, or revised versions of previously filed plans to help them understand and come into compliance with the new rules.”

One solution has been to require LP-1 stations in a state to monitor SiriusXM. In Wisconsin, for instance, this added a second EAN source along with the local LP-1, according to people familiar with its plan.

The rules put greater emphasis on redundancy. “If one source of an alert fails, we want to ensure another source is available to deliver the alert to the public,” said a spokesperson.

Michigan’s state EAS plan was approved by the FCC in late 2022 and has already undergone a recent rewrite by its SECC, according to its Vice Chair Dan Kelly.

Kelly said the ARS system was somewhat “intimidating and confusing” at first. In fact, the state’s EAS plan was rejected by the FCC several times.

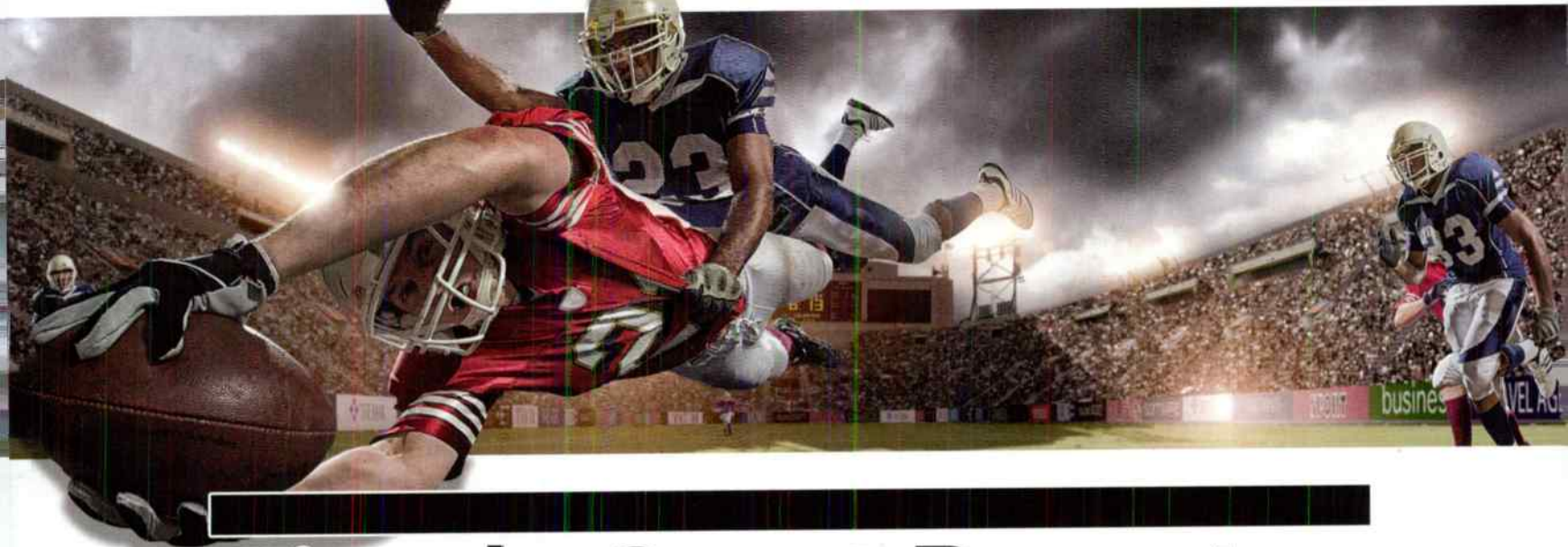
“The biggest challenge was making certain there were two independent paths to reach EAS participants. This is not something we knew going in and was only discovered when the FCC began scrutinizing our plan,” he said.

Kelly, who is director of technical services for the Michigan Association of Broadcasters, developed a flow chart to better visualize how EANs reached local primary stations in the state.

“As a result, we asked some public radio stations to add the capability of receiving national alerts through National Public Radio’s NPR-1 channel,” Kelly said. “Additionally, we supplemented what we were already doing by adding SiriusXM receivers where necessary at key Local Primary stations in the state, where it was apparent that there was only one path for an EAN message to be relayed.”

Kelly says the MAB provided the SiriusXM receivers at no charge to stations. Michigan broadcasters are being told to have printed copies of the latest state plan on-hand at their facilities in case of inspection.





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Emergency Alerting

South Carolina's plan also has been approved. Its SECC Chair John George says using ARS to file was cumbersome but that after several online conferences, the process was easier to grasp.

"A major focus (of the FCC) is on national activations. In the past, we were concerned more about our state activations than we were about the national activations. It was a change of mindset for sure," George said.

South Carolina too is utilizing SiriusXM receivers for a few LP stations that did not have two independent paths for monitoring, he said. No subscriber fee is required since the stations monitor SiriusXM Channel 1, the promo channel that also carries the national tests and activations.

George says the online format will allow easy updates of state plans since it is "basically a living document" in an FCC database.

Plans that have been approved as of early June, listed chronologically, are Illinois, Nevada, Alabama, Minnesota, Alaska, Michigan, Louisiana, South Carolina, Wisconsin, New York, Georgia, the District of Columbia, Washington state, Ohio and Massachusetts. The list appears at www.fcc.gov/SECC-Resources. That page also has a plan checklist for SECCs.

Process tweaks

The FCC in June announced some procedural changes for submitting the state plans and updating monitoring assignments.

The bureau says its system now will allow SECCs to seek approval for changes at any time rather than only once per year; staff will review them as they come in.

"The Public Notice we issued describes enhancements that make our filing system easier to use and clarifies how certain requirements apply, in order to help the remaining SECCs revise and refile their plans as needed," the FCC spokesperson said.

SECCs also will be able to submit and ask for approval for updated monitoring assignments at any time, helping states keep their plans current and reducing the need to ask for waivers. The FCC wants participants to begin monitoring new sources as soon as possible if they can no longer receive an old source reliably. (Also, a submission of a monitoring assignment amendment will be treated as a newly submitted plan; if the bureau approves it, the SECC will have satisfied its annual filing requirement for another year.)


“The biggest challenge was making certain there were two independent paths to reach EAS participants. This is not something we knew going in and was only discovered when the FCC began scrutinizing our plan.”

The commission also clarified that any plan filing may contain monitoring assignments that EAS participants are in the process of carrying out but have not yet fully implemented, as when a station or other participant is going to monitor a satellite source but hasn't acquired the receiver yet.

The bureau also recommended that SECCs configure their monitoring assignments by assigning as many EAS participants as possible to directly monitor (with no intermediate links) one or more sources that receive the National Emergency Message (EAN) signal directly from the Federal Emergency Management Agency.

It pointed out that the 77 radio stations and three satellite networks that make up the National Public Warning System — previously known as the Primary Entry Point system — deliver the


EAN alert from FEMA to EAS participants.

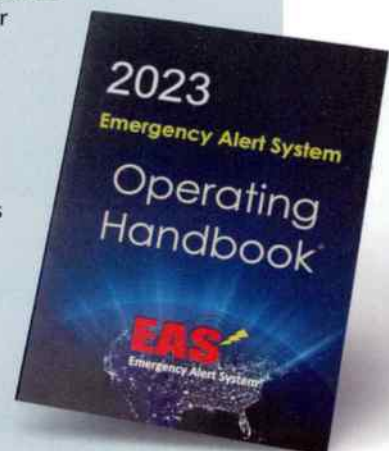
The broad footprint of those sources should make it possible for most participants to monitor signals from one or more of them directly, regardless of their designation in the EAS plan. "The bureau recommends that EAS plans, whenever possible, minimize the number of intermediate links for EAS participants to monitor such sources." 

Got your handbook?

The new 2023 EAS Operating Handbook is available from the FCC's Public Safety and Homeland Security Bureau. This year's updates are minor but broadcasters still need to replace their earlier versions.

The handbook helps the personnel at EAS participants, including radio stations, to handle EAS messages and tests by outlining the operational procedures to meet the requirements found in the Part 11 rules. The handbook summarizes the actions to be taken by your staff upon receipt of a national-level EAS alert; required national, monthly and weekly tests; and state and local area alerts. A copy of the 2023 handbook must be located at normal duty positions or EAS equipment locations.

Download the 14-page handbook as a PDF at www.fcc.gov/file/24607/download. 





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John Bisset

CPBE

The author is in his 33rd year of writing Workbench. He handles western U.S. radio sales for the Telos Alliance and is a past recipient of the SBE's Educator of the Year Award.



What the hay? This place is for the birds!

See what happens when you don't put your boots on right?

Today's broadcast equipment is so reliable and today's concrete shelters are so solidly built that it's easy to be lulled into a false sense of security. "The building is sealed, what could get in?" Out of sight, out of mind.

The photo above puts the lie to such complacency. This site looks like the world's largest bird house! How could this happen?

At the top of the picture, notice that two of the transmission line ports are missing their rubber boots, the black covers visible in the other ports.

If these seals are not held in place with large hose clamps they can come loose, leaving a 4-inch entry point.

So, one more thing to check at your transmitter site. Grab a handful of hose clamps to secure all your rubber boots and avoid this mess.

No names, no locations, just a reminder not to leave openings big enough for rodents or birds to enter.

You shall not pass

Stephen Poole, CBRE, is corporate IT specialist for Crawford Broadcasting. In the June issue of the company's newsletter *The Local Oscillator*, Stephen reports that Crawford's critical servers are now protected by Fail2Ban, a neat little program that blocks an IP address after a few failed login attempts. Find it at www.fail2ban.org.

Stephen has it set to three tries; three strikes and you're out.

When he goes into a server and runs a status check, he's often horrified at the number of blocked attempts. In the past, many of these IP numbers came from obvious

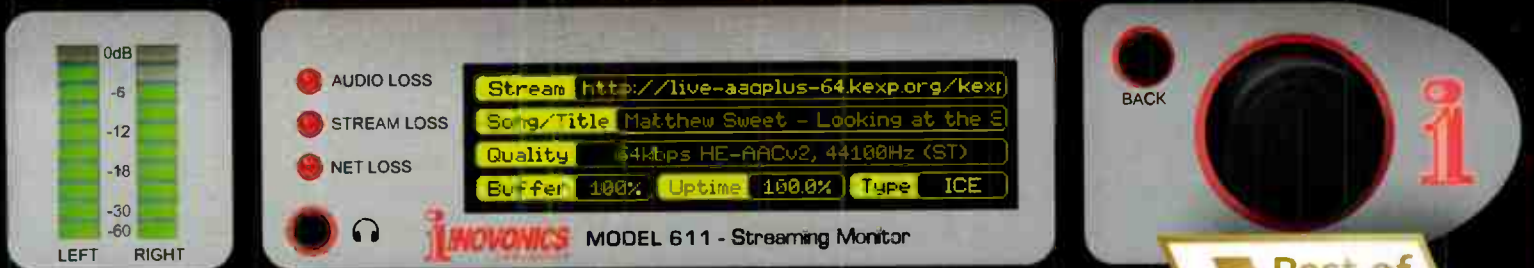


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sources: China, North Korea or Russia. Lately, though, Stephen says the number of IP addresses from the United States has been on the rise.

Do you have a program, app or IT tool that makes your life as an engineer easier? Drop me a line!

Weeds aweigh, my boys

Larry Wilkins, director of engineering services for the Alabama Broadcasters Association, says that when you conduct your regular tower inspections, don't forget the anchor points of guyed towers. They are easy to overlook or neglect, perhaps because of all the walking required to reach each anchor point. But a routine inspection helps ensure that your structure is sound.

Schedule these "walk arounds" quarterly. During growing season, mow a path to each anchor point. At the anchor, inspect for vegetation growth around the anchor or up the guys; clear any you find. Look for signs of rust, broken ground wire connections and cracks in the concrete piers.

Above
To ensure proper orientation, place a pair of white dots on the USB connector and chassis.

Stand at the guy anchor location and view the guy path. Is it clear of any trees that could fall on the guys? Larry says tower erectors suggest a path clear of trees 50 feet on either side of the guys and 50 feet behind the outer guy.

Good engineering practice is to enclose the anchor site within a locked fence; but make sure the fenced area is large enough to permit maintenance vehicles to pass under and clear the guy wires.

Another good tip from Larry: Take pictures of the anchor points, makes notes of the inspection and place the information in the maintenance log.

Confer and converse

If you enjoy reading Workbench you're sure to enjoy the technical sessions that will be part of the two-day annual Alabama Broadcasters Association convention.

On Friday Aug. 11, ABA Engineering Services will host a special Engineering Day of interest to radio and TV engineers.

The seminar is offered at no charge by the association and you don't need to work for an Alabama station to attend. The convention also will offer an exhibit hall.

Watch for information about it on the ABA website, <https://al-ba.com>.

Scot dots

Alex Gray is with Two Lochs Radio in Gairloc, a village on the shore of Loch Gairloc in the North West Highlands of Scotland. It's a community station with a focus on local programming.

Alex read Marc Mann's earlier caution that not all USB connectors are oriented in the conventional way. Terry Skelton had suggested a white paint dot; Alex takes this a step further, marking both the USB connector and the chassis-mounted jack or receptacle with white dots. This way, the staff can be asked to align the dots, and no more broken connectors! 

“Enclose the anchor site within a locked fence; but make sure the fenced area is large enough to permit maintenance vehicles to pass under and clear the guy wires.”

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Writer



James Careless

The author profiled WHIV(LP) New Orleans in the May 24 issue.

Sangean's MMR-99 is worth the money

It's an emergency, rugged, high-fidelity multiband portable

It is risky to manufacture a product that tries to do everything, but the MMR-99 by Sangean pretty much hits that mark.

About the size of a brick, this rugged, water-resistant portable radio runs on AC and rechargeable battery as well as its built-in hand-crank or top-mounted solar panel. AC charging is through a USB-C 5-volt DC port; charger not included.

It can digitally tune to the AM, FM and U.S. Weather bands (with FM RDS/RBDS data on-screen) and connect wirelessly to other devices using Bluetooth or accept an Aux In audio feed through its miniature plug input jack. A version with DAB+ is available in relevant markets.

It features three onboard flashlights of different intensities and colors; station scanning and multiple programmable memories; and wide audio reproduction. It has clock radio functions, weather alert and the ability to charge other devices like cell phones through its USB-A port. (All ports are protected by rubber flaps to keep out

moisture.) There's even a removable durable rubber/webbing carrying handle, to make toting the MMR-99 easy in all conditions.

In fact, the only thing this solid performer is missing is access to the shortwave radio bands. But since emergency radios tend to focus on AM, FM and Weather bands for local radio news and weather, this isn't a strike against it.

Built to take it

The company is building on the success of its earlier MMR-88 emergency model.

"The MMR-99 is the upgraded higher and better version, where new features and functions are added," said Samuel TJ Ho, a company marketing specialist.

"We are covering the outdoor and emergency radio markets with it, knowing that there are so many unexpected events one has to be prepared for. At the same time, the MMR-99 is also for those people who want



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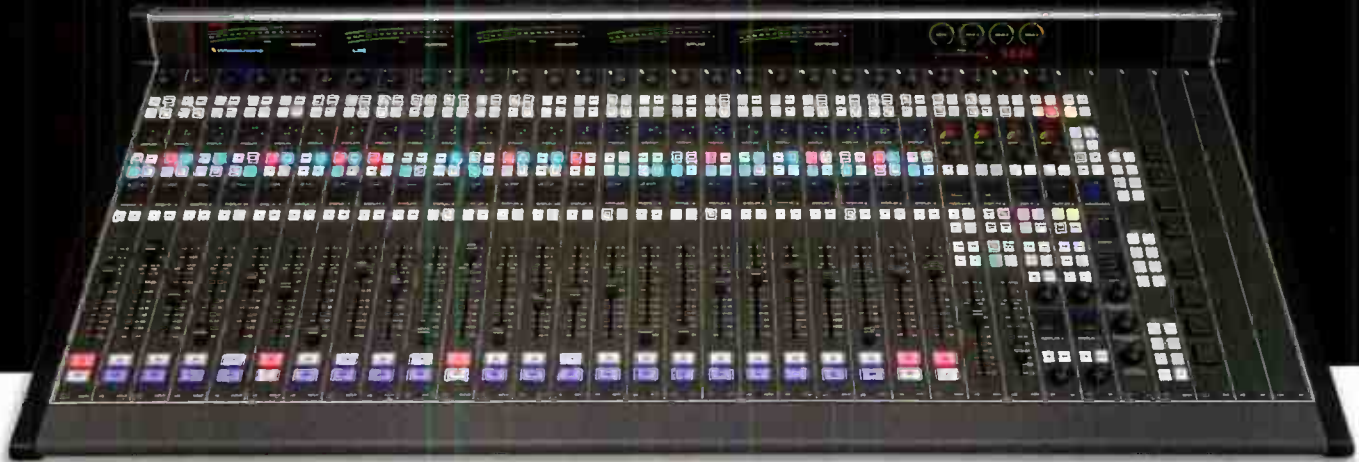


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World Radio History

Consumer Radios



Top

Charging ports have protective covers.

Above

This image shows the carry strap and gives a sense of the radio's size.

Right

The crank feels substantial.

to have a high-fidelity radio/BT speaker with them in places where there is no AC power available for recharging.”

Hitting both targets requires balance.

“Since we wanted to make sure that the MMR-99’s sound quality meets Sangean’s high standards, we built its IPX55-rated dust/water-proof capability to the max — but not too high to cause the sound to be muffled,” Ho said. We noted that there is an end-mounted red flashlight in addition to two white ones of wide and narrow beam. “It was put in for preserving and improving night vision, plus reducing the light profile of a person in different dark situations,” he said.

However, if the user wants to be noticed, there’s a top-mounted button for a two-tone audio alarm that will let rescuers know where they are.

The radio is tough. “The durability on the MMR-99 took a huge step up from its predecessor,” said Ho. “For instance, the reinforced bumpers on all corners not only give it a rugged look but also strong protection from potential damage from dropping and rolling.”

Serious charging options

There are emergency radios that come with rechargeable batteries that don’t hold enough power, undersized solar panels or hand-cranked generators with brittle plastic handles.

The Sangean MMR-99 has none of these problems. Its 3.7V/2600mAh

rechargeable battery is big enough for hours of continuous service and to charge connected devices like smartphones during a power outage. Its solar panel is big enough to make a difference — the display indicates when solar charging is taking place — and the foldaway back-mounted crank is large and robust.

A reviewer for the website Vardagsprepping in Sweden said in a YouTube demo that he left his MMR-99 charging outdoors on a cloudy day for five or six hours and then was able to listen for more than an hour. He said a 10-minute crank gave him more than an hour.

Solid sound and reception

Of course, the main reason that people buy radios — even emergency radios! — is to listen to them. And on this score, the MMR-99 also is solid. The audio out of its front-facing 2.25-inch speaker is high-fidelity on FM, Bluetooth and

Aux In, and better in stereo using headsets. It was above average on AM and Weather.

Reception is aided by a 25-inch extendable, rotating whip antenna for FM/Weather and built-in ferrite rod antenna for AM, plus 40 programmable memories for presets and up/down station scanning. The big, backlit LCD display offers large-print letters and numerals that are easy to read during tuning. So are the black buttons on the front that are trimmed with raised, white-painted words and symbols.

I look for sensitivity — how a radio does at receiving weak signals — as well as selectivity — how good it is at keeping adjacent signals separated from each other for clear reception. I test on the AM band at nighttime, when signals bounce off the ionosphere and cover vast distances.

From my listening location in Ottawa, Canada, the MMR-99 had no problem picking up WCBS(AM) New York, KDKA(AM) Pittsburgh and WFED(AM) Washington, stations that range from 880 to 1500 kHz. It sifted nicely through the AM band, selecting among weak signals with a minimum of noise and interference. The background sound of the digital tuner was low, a pleasant surprise.

It would take many hours of tuning comparisons between the MMR-99 and serious AM DX performers like the Panasonic RF-2200, C. Crane CCRadio3 and GE Superadio II to assess the Sangean’s true capabilities as a long-distance AM receiver. But its performance was solid and respectable, and the directionality of the built-in AM antenna allowed me to fine-tune weak signals by rotating the radio horizontally.

Quibbles

With these features packed into the MMR-99, it isn’t surprising that this radio is a bit hefty. At almost two pounds, it’s heavier than a conventional transistor radio.

The fact that the pushbuttons are not backlit is a problem in darkness. Apart from the fact that the radio might be used when the lights go out, part of the romance of late-night listening is tuning around in the dark.

Finally, the absence of the shortwave bands — entirely understandable from an engineering, size/weight and cost standpoint — is something that I felt.

But I labeled this section as Quibbles for a reason. None of these objections is important enough to offset this radio’s wealth of useful features nor to deny its value as a rugged, high-performing receiver.

It retails for \$149.95 but was available on Amazon in June for under \$100. It is also sold by Wal-Mart and many other retailers online and in-store. 





Composite image using Chris Canton and RapidEye/Getty Images

Writer



Gregg P. Skall
Telecommunications Law Professionals PLLC

Marijuana advertising? Surely it's OK now? Not!

Accepting cannabis or marijuana ads involves significant risk for stations

Hardly a week goes by that I'm not confronted with the question: "Marijuana has been legalized in my state, I can now take that advertising, right?"

For years, one of the biggest advertising issues confronting broadcasters is how to deal with the emerging legalization of medicinal cannabis and the emerging acceptance of recreational marijuana. As of the writing of this article, only two states (Idaho and Nebraska) have an outright ban on marijuana usage. Twenty-two states, the District of Columbia and Guam have legalized recreational use of marijuana, according to U.S. News & World Report, while the National Conference of State Legislatures reports that 38 states, three territories and D.C. allow the medical use of cannabis products in some form.

Predictably, growers and dealers are seeking to advertise their products and services. In an ever more competitive

advertising world, broadcasters want to know: Is it legal to broadcast advertising for marijuana?

Complex issue

While limited use and possession of marijuana is now permitted under state law in a majority of states, there are several important things broadcasters must keep in mind.

First, even if the state has legalized marijuana use, broadcasters must be aware of the limitations of that legalization. For example, many states have strict limits on the amount of marijuana one individual may have in their possession. Similarly, many states also require proof of residency to qualify for medical marijuana use. Advertisements that fail to account for any such limitations could be a problem for broadcasters that elect to air the advertisements, as it could be construed as the broadcaster encouraging illegal activity.

In such a case, the station could be subject to civil and criminal penalties, and to penalties before the FCC, including losing their broadcasting license.

Second, and most importantly for broadcasters, marijuana continues to be classified as an illegal Schedule One drug at a federal level under the Controlled Substances Act.

In a case called *Raich v. Gonzales*, the Supreme Court ruled the federal government can prosecute medical marijuana patients, even in states that permitted medical marijuana use. Some medical marijuana dispensaries in states where it has been legalized have been subject to drug enforcement raids from federal agencies.

While several attorneys general, including Merrick Garland at the federal level, have taken the position that the Department of Justice will not prosecute marijuana cases where the state has decriminalized its usage, they have nevertheless committed to “vigorously enforce” federal laws governing Schedule One drugs as a “core priority.”

These policies remind us that although medical marijuana may be legal under the laws of several states, in any quantity its use, possession or sale remains illegal under federal law. And even in states that have legalized marijuana use, U.S. attorneys may still decide to prosecute marijuana use or possession in circumstances where the individual failed to comply with the strict, stringent “strong and effective” state regulatory scheme.

What to do?

Accepting advertising for cannabis in any form, for medicinal or recreational purposes, is a dangerous proposition.

Even in a state that has legalized its use, the broadcaster is still subject to extensive risk. Before accepting any advertising the broadcaster would be required to conduct an extensive case-by-case analysis of each advertiser to determine whether the advertiser is legally operating, and an extensive review of the proposed advertisement to ensure it complies with any and all state requirements with respect to marijuana. Before airing any marijuana advertising, the broadcaster must ensure the advertisement is promoting a legal activity under the relevant state’s specific “strong and effective” regulatory scheme, which can be a difficult and expensive analysis.

Some may think the Controlled Substances Act (CSA) only applies to the advertiser and not to the medium that publishes its message (in this case the broadcaster). However, this issue is not black and white and a broadcaster may be found criminally liable.

For example, 18 U.S.C. §2 states that a person who aids or abets the commission of a crime is punishable for that crime, same as the person that committed the crime. The DOJ Criminal Resources Manual states that acts of the perpetrator become the acts of the aider and abettor and the latter can be charged with having done the acts even when the principal is not tried, convicted or even identified. Interpreting these



About the author

Gregg Skall is a veteran telecom lawyer who advises broadcasters and telecommunications companies in their FCC regulatory matters and their business dealings.

Learn more at www.tlp.law/professionals/gregg-skall/.

rules, a broadcaster could potentially be found to aid and abet criminal activity by airing marijuana advertising.

It is rare for the rules to be interpreted in this fashion; however, the situation surrounding marijuana use might prove to be so high-profile and controversial that an aggressive U.S. attorney might consider prosecuting the broadcaster. Such a case would certainly involve First Amendment issues as well as other complicated defenses; however, victory might come only after a long and expensive legal experience.

Bottom line

Communications lawyers must advise FCC licensees that accepting cannabis or marijuana advertising involves significant risk. It could result in a challenge to your license that even a sympathetic FCC may not be able to avoid, as well as possible prosecution at a state or federal level. Even if successfully fended off, the cost of fighting that challenge could far exceed the benefit received from the advertising revenue.

“**Marijuana continues to be classified as an illegal Schedule One drug at a federal level under the Controlled Substances Act.**”

A reasoned analysis would conclude that accepting such advertising presents substantial risk to the station. No matter how acceptable and entirely legal under local state law, the advertising of marijuana sale or use is still a violation of the Controlled Substances Act. Airing the advertisement could be considered a violation of federal criminal law. That can form the basis of an attack on the character qualifications of the licensee before the FCC and place the broadcaster license at risk.

If such a challenge is brought, regardless of how FCC officials might feel about the seriousness of the issue, under the Communications Act they may still be required to evaluate the licensee’s character. Such an evaluation could result in a lost or conditional license and quite probably, a very hefty legal bill.

This column is provided for general information purposes only and should not be relied upon as legal advice pertaining to any specific factual situation. Legal decisions should be made only after proper consultation with a legal professional of your choosing.



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BUYER'S GUIDE

Consoles & Mixers

About Buyer's Guide

The Buyer's Guide section appears in every other issue, focusing on a particular category of equipment and services. It is intended to help buyers know what's on the market and gain insight into how their peers are using such products.

Arrakis virtual consoles serve massive translation audience

Systems integrator Naztec International Group built a unique system in Saudi Arabia

Arrakis Systems products are playing an important role in a recently completed major translation project in Saudi Arabia.

Systems integrator Naztec International Group Florida designed and implemented a unique broadcast

fiber optics and microwave to stream digitally to custom applications, websites and platforms, as well as through FM radio broadcasts.

The first site contains the master control room for monitoring the system along with the data racks, encoders and translator cabins equipped with Brahler Interpreter

compatible transmitters, the system uses two automatic 5+1 transmitter switching systems and state-of-the-art equipment and software, notably the DARC AoIP Virtual Console by Arrakis.

"The Arrakis console sits at the heart of the master control room and was chosen for its ease of use with Dante networks, which allows



Above
Two views of the facilities at Makkah City. Master control room work areas are at left, transmission hardware at right.

system enabling live audio translation into 10 languages — expandable to 30 — for the largest pilgrimage infrastructure in the world, Makkah City, known to many Westerners as Mecca.

The project was commissioned by King Salman bin Abdulaziz Al Saud as part of "Vision 2030," the kingdom's plan for growth and expansion.

Naztec spent two years designing, building and installing this complex system that reaches millions of people around the world in multiple languages. Currently supported languages are Arabic, English, Urdu, French, Persian, Turkish, Bangla, Malay, Hausa, Russian and Chinese.

The installation connects three broadcast sites miles apart through

Consoles. Some 50 translators and 25 sound, streaming and broadcast engineers keep the system running 24/7.

The second site at Makkah City houses a dozen Nautel VS2.5 FM transmitters, combiners and two FM antennas, along with racks of decoders and two-way monitoring equipment.

The third site at Arafat City houses another dozen Nautel VS1.5 transmitters, combiners and two FM antennas, in addition to other equipment. Since last year, from the Arafat site, the one-day pilgrimage event has had more than 250 million live concurrent listeners from around the world.

In addition to the 24 Nautel FM HD-

for seamless audio mixing and adjusting," according to Naztec. "The multi-touch feature of Arrakis is perfect for touch screens, enabling control over multiple faders at the same time."

It said presets allow for ease of switching from the live broadcast to the automation system; the sound engineers can manage the live broadcast and make adjustments as needed.

Equipment was shipped from West Palm Beach in Florida by plane and ocean freight. A team of engineers and technicians from Florida completed the installation on-site. The architect was Sal Pazhoor, Naztec International Group's president and CTO. 



More Info
www.arrakis-systems.com

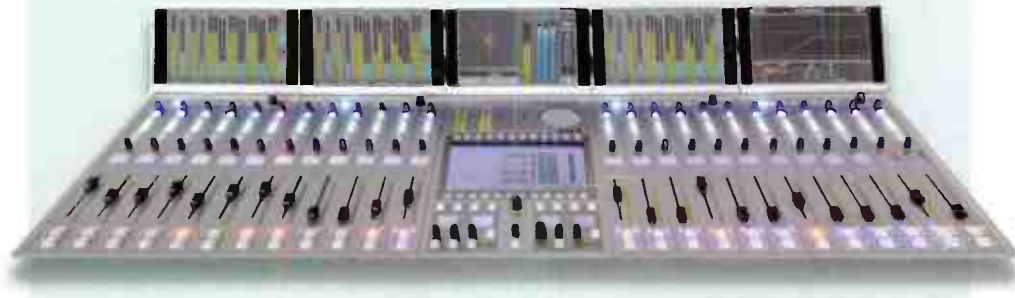
Tech Update

AEQ Atrium Adds Fiber Option

The Atrium digital audio mixer from AEQ is intended for audio environments with larger operational requirements. It handles up to 1,000 channels of local or IP audio, controllable through one or several surfaces, each with up to approximately 90 motorized and pageable faders.

The engine can be shared between up to six consoles. Each surface can be customized.

Each channel with motorized fader can have an A/B configuration or up to eight channel pages. Each can have access to pre-defined bus shipments, or you can define channels for bidirectional multiplex so that each user has the mix of all voices except their own.



Atrium can handle 5.1 or manage several control stations from the same console to facilitate the work of a presenter or producer. Other features include a virtual console application; memories for scenes and processes; and autogain and automix functions.

Now available are two new cards for fiber optic connections.

The XC24 V3 card incorporates 64 redundant ports of IP audio in Dante/AES67 formats, and through Dante Domain Manager, also SMPTE 2110-30. "The novelty of this card is that in addition to the 1000BASE-T Ethernet connectivity, it incorporates cages for SFP cartridges, which can be equipped with different fiber optic transceivers with a range of more than 100 km, depending on type," AEQ said.

The XC34 V3 card incorporates 128 redundant IP audio ports in Ravenna/AES67 formats, and also SMPTE 2110-30 and SMPTE 2110-31, with NMOS control. It too incorporates the SFP cartridges.

Info: www.aeq.eu/products/atrium

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Remote mixing in a pinch with Axia Altus

Virtual mixing kept seven stations on the air through a facility migration

The technical team at Audacy Northwest was facing a deadline. "This project started at our Portland cluster with the decision to move out of the studio we had been in for the past 25 years," said Director of Technical Operations Jeff McGinley.

"We found a facility we wanted to move into, but the timeline dictated that we had to leave our old facility before the new one would be ready."

It quickly became a six-week crush to figure out how they would keep their seven radio stations on the air during this period. McGinley contacted Telos Alliance to discuss solutions, and they proposed using the new Axia Altus Virtual Mixing Console.

"We worked closely with their Customer Success team to load a server with the appropriate containers and stacks and get Altus up and running," McGinley said.

"Within the containers, we were able to run five independently configured stacks, each with its own IP address and Altus console, effectively giving us access to five mixing consoles at any given time."

They found space in the main transmitter building, which is a central location to all the areas around Portland from which they broadcast, and set up the Altus servers, automation system, primary file server and loggers.



Above
The software-based Altus brings the features of a traditional console to a computer, tablet or smartphone via web browser.

Right
Jeff McGinley


"We set it up so that everything can be accessed via VPN with two-factor authentication, making remote production a breeze. All the magic happens behind the scenes for the end user, and the experience is straightforward. For the networking team, we have found that once we had the system set up and configured correctly, there wasn't a need for much adjusting."

McGinley said he was somewhat anxious about switching from hardware consoles to a virtual mixer, but that the air talent has quickly picked up on using Altus.

"In fact, the staff that I had worried most about adapted the best. As a bonus, the fully remote configuration has made remote troubleshooting more accessible. If I get a silence sense notification in the middle of the night, I can access everything from the automation to the control out to the rest of the air chain, all using the

same system our morning show uses to produce their content."

Now that they have moved into the new studios, the team is keeping two Altus stacks active for remotes and troubleshooting.

"Altus is the perfect way to go out in the field without worrying about coordinating with a board-op back at the station. Now that we have experienced success with Altus here in Portland, we are experimenting with deploying this type of setup in several other markets to take advantage of all its benefits across a wider footprint." 


More Info
telosalliance.com



Tech Update

New Features, Capabilities for Lawo Power Core Rev3

Lawo has upgraded its Power Core software-defined DSP mixing engine and I/O device for IP audio infrastructure and broadcast environments.

"Power Core Rev3 features new hardware, new software options and support for multiple 1RU extension units to dramatically increase I/O capacity," it stated.

The number of Ravenna/AES67 ports on the front have doubled to four; they can be configured to expand networked I/O count to 512 AoIP channels, or to provide dual, redundant network connections; enable discrete network link connections for LAN segment separation; or be configured as a gateway for separately connected LAN and WAN network segments.

Four MAD1 connections facilitate baseband-to-IP conversion. A new GPIO expansion card with eight GPI, eight GPO and two VCA inputs joins the current analog, mic, AES3, MAD1 and Dante interfaces;

eight rear-panel card slots enable users to tailor their mix of I/O and control. Other changes include unicast streaming support and front-panel SD card and USB port access for software maintenance.

Users can choose from various licenses to configure their Power Core for operational scenarios such as network-edge I/O ingest, baseband-to-AoIP gateway or mix engine for Lawo diamond mixing consoles as large as 60 faders — or with the Max license, up to four average-size diamond consoles and/or virtual mixing interfaces at once. A base license called Console Compact can economically power smaller consoles of two to 16 faders.

Power Core Rev3 also introduces DSP features such as a low-latency Loudness Input Leveler that matches audio to a pre-set loudness target, a self-keyed sidechain filter for dynamics and high-granularity EQ.

It also now supports a companion eight-slot, 1RU Audio I/O Extender (AIOX). Users can connect up to 20 AIOX devices loaded with GPIO, analog, mic and AES3 cards to one Power Core, expanding system I/O count by up to 1,280 additional connections.

Info: www.lawo.com/power-core



Some voices need work



THE AUDIOARTS VOICE 1 has all the tools and secret sauce of the Wheatstone M-1 microphone processor. But it's got more: WheatNet-IP, AES67, remote GUI control, password protection, real time clock and presets—complete with scheduler. It can be controlled from the OLED display and, of course, your desktop computer.



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More virtual for Bonneville at the 100-studio mark

Scripting automates processes and leads to more touchscreens

As Bonneville engineers began to scale up to 100 new studios in six major U.S. markets, they noticed something interesting.

More and more touchscreen interfaces began seeping into studios as they standardized on WheatNet-IP in Salt Lake City, Denver, San Francisco, Sacramento, Phoenix and finally Seattle, affecting all 22 stations in six markets.

In Phoenix, for example, they went with small mixer turrets for news desks. But by the time they arrived in Seattle months later, they were putting in touchscreen mixers for similar news desk positions.

What happened in between was a lot of backend scripting of the WheatNet-IP system to automate processes with switching and logic, which translated over to using touchscreens instead of fixed control panels or console surfaces in some cases.

Software applications and interfaces can fill in the gap where hardware can't, said Bonneville Regional Director of Technology Aaron Farnham.

Wheatstone's Screenbuilder for building custom screens and other software such as ReMIX remote app make it possible to route, mix and control studio elements from a touchscreen. "We're probably using 60 percent of what we have. Now that we have a working knowledge of Screenbuilder, we can fine tune and make our systems more sophisticated," said Jason Ornellas, regional director of technology for Bonneville International.

Even the fixed LXE console surfaces for Bonneville's



Above
This studio serves KMVQ(FM) in San Francisco.

Right
Wheatstone ScreenBuilder was used to design custom screens like this one for a news desk at KIRO(FM) in Seattle.



More Info
www.wheatstone.com



main on-air studios use touchscreens in place of the console meter bridge. "We now have these three-channel LXE wedges that each have their own screen that looks like a meter bridge but are actually touchscreens," said Farnham.

The Bonneville team officially completed the six-location project in early 2023, but in many ways, the project is ongoing. "I think for us, there are going to be more software applications or combining more applications and more vendor interoperability in a single box," said Ornellas.

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Vibez.Live streams with Calrec

Station in Johannesburg relies on Type R for Radio

Internet station Vibez.Live in South Africa is using a Calrec Type R for Radio platform.

Type R is Calrec's flagship IP-based mixing system for radio.

One Type R core can run up to three independent audio mixers, each with its own dedicated mixing, routing and monitoring engines.

Calrec recently added a compact Talent Panel. The slimline unit allows guests to switch between multiple sources via its integrated hi-res TFT and adjust headphone volume with a dedicated rotary control. Four switches allow for the panel to be customized to the user with common functions like talkback and cough switches, ensuring that only essential controls are close to hand.

Also recently introduced, Calrec's new GPIO unit for Type R is a 1U box that delivers an additional 32 x GPOs and 32 GPIs for interfacing with external systems such as playout,



More Info
calrec.com


phone systems, codecs etc.

Vibez.Live describes itself as "a local broadcaster but with a footprint that extends across the globe, with strong audiences in the UK and USA."

It uses a six-fader Type R with dual layer functionality for extra faders with a button touch and a large soft panel with feature sets pre-loaded.

John Badenhorst, co-founder and a host, said Vibez.Live consulted with

system distributor Wild & Marr about Calrec's system.

"While the Type R core has enough I/O for our current needs," he said, "we also purchased a Type R analog I/O box that provides an additional 16 mic/line inputs and six general-purpose input/output interfaces." He said listeners commented on the improvement in sound quality. 

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The Nighttime Beckons

Readers responded to this feature in the May 24 issue.

What a view

I loved that great picture "The Nighttime Beckons" taken by Mike Pappas. You asked for pictures so here's mine (above right).

I'm Dick Pust, a semi-retired broadcaster, who spent 50 years working in the building shown here. When KGY moved into its new studios at the southern tip of Budd Inlet in Olympia, Wash., I was the receptionist; when I left in 2011, I was the general manager.

During those years visitors would ask how the staff could get any work done in such a beautiful place, with its spectacular view of lower Puget Sound and the Olympic Mountains. My sales manager Darlene Kemery took this picture in the spring of 2010. The photo is prominently displayed in my book "AM1240 Life at a Small Town Radio Station," available on Amazon.

Sadly the Port of Olympia, which owns the property, has indicated it may not renew the station's lease when it expires in a couple of years. A movement is underway by the local historical society to save the building and have it placed on the Olympia Heritage Register.

Dick Pust
 Host of "Your Community"
 KXXO(FM)
 Olympia, Wash.



A haunting effect

Thanks for the evening tower photograph by Mike Pappas. Here is a scan of a Polaroid picture I took one night in 1963 when I was working as a transmitter engineer at WCOJ(AM) in Coatesville, Pa. The picture is a 30-second time lapse exposure, with the moon behind moving clouds.

WCOJ, 1420 kHz 5 kW DA-N was a commercial station owned by Chester County Broadcasting Co. Daytime non-directional operation was remote-controlled from the studio.

The rules at the time required a licensed First Class engineer to be on duty at the transmitter during nighttime operation with a four-tower array. It was my first commercial radio job after college.

Xen Scott

Radio to make people happy

Here is a picture of my home studio setup. It's functional, yet simple and elegant.

I'm a 44-year veteran of U.S. commercial radio, now retired. Since the pandemic, I try to make people happy by providing personality music radio, a dying art. I broadcast live to eight radio stations in three countries. I also do Facebook Live during my broadcasts and ask listeners if they want to come on the air and chat. If a listener responds, I call them! I think I'm the only person in the world who actually calls their listeners via FB Messenger. Now all I do is make people happy on "1995 Happy AM"!

Wayne Tropp
Charleston, S.C.



30



The farmer's wife does her shift

We are "Tri-State Praise KGCR 107.7fm" in Brewster in northwest Kansas. The station, shown here, is on the corner of a wheat field. Sometimes it is corn and sometimes there are cows in the back.

One of our announcers is the wife of a farmer. She drove the combine to work one afternoon because she was helping cut the wheat during harvest. This picture is a perfect example of our community!

Tiffany Martin
Station Manager
Tri-State Praise KGCR 107.7fm
Brewster, Kan.



How to submit

Radio World welcomes comment on all relevant topics. Email radioworld@futurenet.com with "Letter to the Editor" in the subject field.

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We've been busy creating more new products with Chameleon technology. Peruse and enjoy. Better yet, buy one and put it to work. We're so sure you'll love the sound that we offer the industry's only unconditional 30-day money back guarantee.

C4 Livestream Processor

End the problem of blasting commercials and mumbling voices. Your programming will always sound consistent even with inconsistent source material. C4 adapts to incoming content so that any format sounds amazing. And C4 is fully compliant with the latest loudness standards from Apple, Amazon, YouTube and others. \$999 MSRP.

C6s Livestream Processing Software

Chameleon on your PC! Built around the same decision-making engine as the C4, C6s adds fine tuning controls so you can influence the sound. Automatically maintains your chosen loudness target across wildly disparate source material. Available as a standalone application for either Windows or MacOS, and also as VST and AU plugins. \$599 MSRP.



C-LEVEL Studio Audio Processor

C-LEVEL normalizes contribution audio. Think of it as a gentle multi-band AGC making everything sound consistent and polished. Works great for STL protection and OTA pre-processing (as an upgrade for those legendary boxes you can't get anymore), or at satellite and cable originations before sending the audio downstream for rebroadcast. Even use it to tame TV audio. \$999 MSRP.



C3 Headphone Processor

Now your on-air team can hear themselves the way listeners do: big, bold, beautiful and smooth. C3 simulates the sound of an OTA processor, which helps talent work their voices and mic techniques to get that compelling sound that keeps your listeners tuning in. \$799 MSRP.

SMooth Mic Processor

Artists love the legendary SM-7 microphone. Chameleon SMooth is the world's only mic processor engineered specifically to enhance its unique audio characteristics. Compressor, de-esser, frequency shaping, and a revolutionary new approach to eliminating room noise will make SMooth the dream machine for SM-7 (and lucky SM-5) owners. \$899 MSRP.





meow

Well...not really. Our LION has the latest Wheatstone DSP algorithms; it is *not* a 90's era processor by any means. The AUDIOARTS LION Five-Band Processor/Multipath Controller has WheatNet-IP, so it can be networked. It has analog and AES3 so it can stand alone. It has Wheatstone SystemLink™ built in, to send full 24-bit linear audio directly to your transmitter over reliable high-speed links – Baseband 192 MPX with FM+HD timing locked (no codec to degrade audio quality). And it comes with 50 presets so you can plug and play.

Let your signal ROAR on a kitten budget!



SO...what's really in the box?

ALL SIGNAL PATHS

- Analog, AES3 and Wheatnet-IP audio
- AES3 input accepts 32kHz to 96kHz sample rates
- Variable high pass filter and voice phase rotator
- Dynamic L/R correlation meter for proper stereo channel phase
- Front panel setup
- PC-based GUI included
- Ethernet-based remote control
- Four-band equalizer: low/high shelf plus two-band parametric
- User-adjustable multiband crossover frequencies
- Independent multiband compressor and leveler can be operated separately or in combination
- Multiband spectral manager

- Newly developed bass management
- High-performance low distortion multiband limiters
- Metering for all input and output levels and dynamics processing

FM PATH

- New distortion-masked FM peak clipper
- Specialized live voice algorithm minimizes vocal distortion
- Exclusive stereo multipath controller
- RDS/RBDS generator, static and dynamic
- Precision FM stereo MPX generator with multiplex mask filter
- Baseband192 built in for 192kHz digital MPX link to transmitter

- Support for ITU.BS-412 MPX
- Ten seconds of FM/HD diversity delay
- Test oscillator

HD/STREAM PATH

- Low/high shelf plus two-band parametric equalizer
- HD/Stream final processing accepts audio from unprocessed input, output of AGC, or output from multiband limiters
- Oversampled precision look-ahead limiters for exceptional final peak control
- Specialized dynamic high frequency protection for low bitrate codecs; also operates in wideband (>12kHz) and <12kHz modes
- ITU-BS.1770 loudness metering and controller