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# Your culture isn't your studio

It's what comes out of the speakers that counts



Paul McLane  
Editor in chief

**A**

lpha Media has operations in 42 markets around the United States, stretching from Alaska to South Carolina, comprising

about four dozen studio locations and 200 or so FM and AM licenses.

Director of Engineering Mike Everhart is one of several engineers I interviewed for our ebook "After the Masks Come Off."

He told me that Alpha's leadership have been putting lessons of the pandemic into practice.

"You'll see it in future iterations of our studio builds. We're entering a right-sizing operation in the Portland, Ore., market right now; and we're looking at a move-and-build in another market in the next year or so that will take a lot of those lessons into account."

The company was already heading down this road, he said, due the cost of construction, which Everhart said has ballooned well above the rate of inflation; a general decline in radio revenue in recent years; and the possibilities that technology brings for enabling remote work and creating more flexibility in the use of infrastructure.

"Those forces have come together and forced us to rethink the way we do these facilities," Everhart said.

"We've been reducing the physical footprint. We've been

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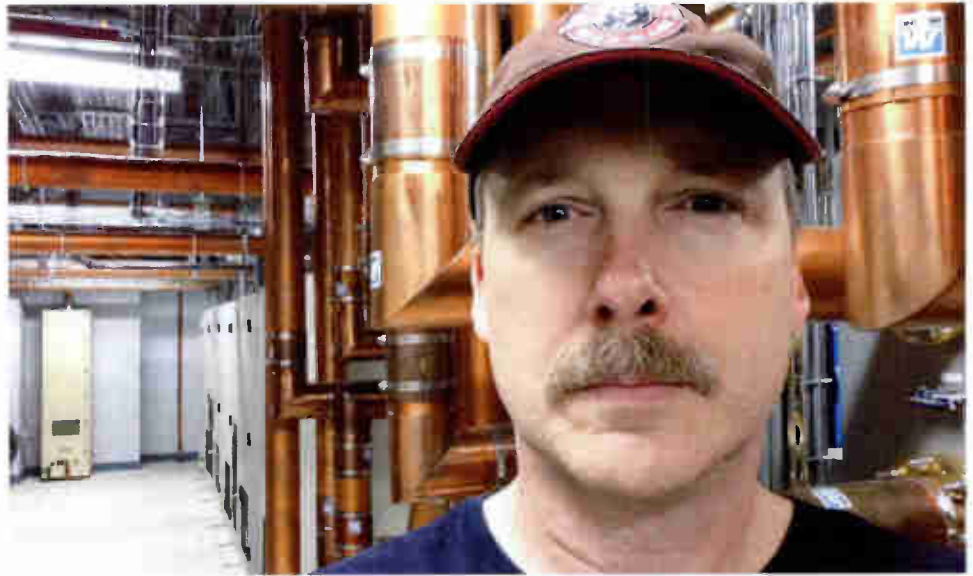
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reducing studio counts. We've been looking at hoteling workspace as opposed to dedicated individual workspaces, in the office as well as the studio. A person does not have a dedicated workspace all the time."

A design principle of engineering is to seek efficiency, he said; but Alpha Media's analysis has shown that traditionally radio organizations are inefficient in their use of space, with low occupancy rates of desks and studios. He attributes this to a cultural paradigm in which a brand's identity is wrapped up in the control room, where you build a culture to share with an audience.

"What we've found is that the culture and feel of a brand is what comes out the speakers and the feelings engendered in the audience members. It doesn't come from the space, it comes from the head and the heart of



the people producing the programs."

With all that taken into account, and given the costs of building facilities and the expense of commercial real estate, "It doesn't make sense to keep doing things the way we've been doing things."

I enjoyed putting this particular ebook together and invite you to read more from Mike Everhart and other top engineers. Find it at [radioworld.com/ebooks](http://radioworld.com/ebooks). 

**Right**  
Mike Everhart

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John Schneider

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# Delilah revels in rediscovering her roots

Legendary radio host believes local content will be the key to KDUN's success

**M**ost radio professionals have fond memories of their first radio jobs. Many a seasoned professional started his or her career as a teenage part-timer at a small-town AM or FM station, developed a love for the business there and turned it into a lifetime career track.

But how many professionals later had the opportunity to become the owner of their first station?

One person doing exactly that is Delilah Rene, the well-known syndicated radio personality. Delilah got her start in the mid-1970s in the small coastal town of Reedsport, Ore., where she won a high school speech contest at age 13. The judges, Jerome and Steve Kenagy, owned local

station KDUN and were impressed enough to offer her employment.

After three years of radio experience at KDUN, she moved on to a number of stations in Eugene and Seattle before landing at KLSY in Seattle. It was there that she created the nighttime "Delilah" show, taking listener phone calls and playing requests.

It quickly gained local popularity and then went into syndication in 1994 with four stations. Today the "Delilah" show is distributed to 170 stations and the Armed Forces Network through the Premiere Radio Network. Delilah Rene was named to the NAB Radio Hall of Fame and NAB Broadcasting Hall of Fame in 2016 and 2017.

Now, at age 61 and after experiencing career successes

**Above**  
Delilah Rene on the air at KDUN in the 1970s.

that few broadcasters achieve, Delilah chose to return to her roots when she had the opportunity to purchase KDUN.

The AM station, licensed for 50 kW days and 630 watts nights on 1030 kHz, was silent at the time. The physical plant consisted physically of just an overgrown tower site and a working Nautel transmitter.

She built new studios in the former Jewett Elementary School building — the exact space that was her homeroom as a child — and put KDUN back on the air on Labor Day morning in 2021.

It's now operating as a traditional community-oriented station, with a live morning show, daily fishing and crabbing reports, a "Tradio" program and liberal promotion of local events. KDUN is using a PlayOUT One system for both live-assist and automated programs. She is planning to cover local sports in the near future.

### "Like Brigadoon"

"I wanted to give back to the community where I grew up," she said. "It sounds corny and foolish, and everybody in the world tried to talk me out of it. But I owe such a huge debt to the Kenagys and to Reedsport, and especially to KDUN, that I felt compelled to give back.

"I really want it to be a full-service, small-town local radio station, and that's what we're trying to build. Of course, I want it to pay for itself, I don't want it to be a charity. But that certainly wasn't my motivation."

**I really want it to be a full-service, small-town local radio station, and that's what we're trying to build.**

Reedsport, population 4,100, has no local newspaper. In addition to KDUN, it is served by an FM station and a non-commercial repeater from Eugene.

Asked if an AM station can be competitive today, she responded, "We're up against some big challenges obviously. Technology has kind of left AM in the dust. But Reedsport is like Brigadoon, it's like going back in time in a lot of ways. While I don't believe it would work in a major market, I do think it will work very well here."

Delilah believes local content will be the key to KDUN's success.

"People are hungry for content, and Reedsport needs a voice. That's what we're endeavoring to do — to be that voice they're missing. For school sports, for local news, for

#### Below

The former Jewett Elementary School is now a multiuse facility. One of those uses is as the new home of KDUN 1030.



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fishing information," she said.

"The town is perched on the banks of the three rivers, and everybody who lives there loves fishing, loves crabbing, loves clamming. And KDUN used to provide all that information. We're going to do it again."

Perhaps a 50,000-watt AM signal is a bit much for small-town radio?

"When I was there, we were '5,000 watts of crystal-clear AM power — KDUN, the voice of the Oregon Dunes.' I still dream that ID every few weeks. Now we're 50,000 watts, how crazy is that?"

"So, I'm hoping to step it down. We really don't need 50 kW, and I don't need the electricity bill. Right now, we reach almost border-to-border from Washington to California. But really, the station exists for and about Reedsport, so we'll adjust that if we can in the future."

### Content is the key

Delilah believes changes in technology are a challenge for the radio business, but that the secret to survival is great program content.

"Technology is changing so quickly. Who'd have thought that TikTok and Instagram would take over where Facebook once was a year or two ago?"

"But it doesn't really matter what the platform is, or how you're delivering the content. So long as people are hungry for great content, I don't need to worry about being employed. My job is not to be the best radio personality. My job is to share my heart, my gifts and my talents with as many people as I can, whether that's on my podcast, Facebook, or whatever forum.

"We want to do that on AM, but we're also going to do it on *kunradio.com*, and hopefully people will find us there."

While she is obviously pouring her heart into KDUN, she has no plans to quit her day job. She still produces her syndicated show at her home studio near Port Orchard in Washington state.

"I have an amazing support staff. My regular show has the best producers in the world. I take the calls, I do the breaks, and they figure out all the different incarnations of that. We produce several different incarnations of the show every night, 7 nights a week."

But her new endeavor is occupying much of her attention.

"I am pretty much managing every aspect. I hope to get it up and running and the programs integrated enough that I can step back and let the people there run the show. But I'm sure I'll be checking in on a daily basis."

Local business is excited to have her. "In the short weeks since KDUN AM 1030 made its return, the positive impact on our community has been remarkable," wrote Jennifer



**Top**  
Delilah shows off the new KDUN studio space.

**Left**  
Following in Delilah's footsteps is Molly Anne, who moved to Reedsport from New Mexico. She does weekends and helps with everything else at the station.

**Right**  
Radio veteran Bob Larson is KDUN's engineer and hosts the morning "Tradio" program.

Rockwell of the Reedsport/Winchester Bay Chamber of Commerce in The News-Review newspaper. "The care, involvement and dedication that has already been shown to the area speaks volumes about the intentions of KDUN."

**“ It doesn't really matter what the platform is, or how you're delivering the content. So long as people are hungry for great content, I don't need to worry about being employed. ”**



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# DAB+ and RadioApp boost radio's reach in Australia

CRA's Joan Warner says radio can't pick just one "winner" when it comes to new platforms

**D**AB+ is on the air in Australia's five major metro markets plus several other cities. Commercial Radio Australia Chief Executive Officer Joan Warner has said, "DAB+ audiences have grown as a result of broadcasters enhancing their digital radio formats and car manufacturers continuing to add DAB+ radios to their vehicle ranges." An estimated 2.8 million DAB+ receivers have been sold to date.

This is an excerpt from an interview in the ebook "Trends in Digital Radio 2021."

people go, well, "Fifty percent of listening is on streaming, 40% is via DAB, so maybe it's time to think about an AM and FM turnoff." But that's not on the radar at the moment. Not until we've got digital out into the regions.

So don't pick a winner. You can't afford to.

One of our broadcasters who had the same doubts about digital 10 years ago said, "We're looking at this as defensive spending as well. If we don't do it, someone else will jump in and grab that spectrum and offer a product that we could be offering."

Now it's, "Okay, how can we be more offensive with our DAB+? What are the benefits?" Incremental audience, extra revenue. We've got new stations — and we're able to put all of these stations, including AM and FM, onto our industry RadioApp. Now we've got 400 available on one app, where normally we have only 11 commercial stations in a city in Australia.

**RW** It sounds like your app is an important part of this conversation.

**Warner:** It's important. I mean, listening on the internet is still at fairly low levels everywhere. ... About 15% of listeners will listen at some point online, but sometimes they're also listening on their car radio or on a DAB radio at home.

But the app has provided us an introduction into organizations like Google and Amazon to get all of Australian radio working properly on their speakers, first time, every time.

Prior to us having RadioApp, the accuracy on smart speakers when asking for an Australian radio station on Amazon was 23%. The accuracy on Google was 40%. As [speakers] became more popular, people got them out of the box and said, "Oh, please play Hit Radio Sydney for me," and what they were coming up with was New York or Los Angeles, or nothing.

That's a missed opportunity for radio to be back where it may not have been for a while, back in the bedroom or the living area.

So we saw it as a strategic play. It was easy to say to Google and Amazon, "You only need to deal with one organization here." Now because of RadioApp, on those speakers we've got 400 stations including every AM and FM and DAB station in Australia, commercial plus the ABC plus SBS and all of their DAB stations. Four hundred radio stations. And there are 3,865 ways to ask for them — by saying the frequency, by saying the name of the station, by saying the name of the station and the town. **RW**



**RW** Many broadcasters ask whether they should invest in an over-the-air digital format when there's so many other distribution channels.

**Warner:** They need to be a bit more strategic. We know that no mobile network can carry all of radio listening traffic live and local. If everybody tried to do all of their radio listening over a mobile network, the network would crash. We'd break the internet.

And I'm talking about live radio. Podcasting has yet to be proven to be the river of gold we think it will be ... We need to work out how we monetize it.

But even telcos will say, "Yes, we don't want all radio listening on our mobile network, because there'd be no room for anything else." So broadcasters have to step back and take a strategic look and say, "All right, where do we want to be?"

And our answer is, we want to be everywhere. We want to be, as broadcasters, accessible on every single platform we can be. That will be AM and FM in the medium term.

It could be the case in the future that

**Above**  
A promotional image for DAB+ broadcasts in Australia.

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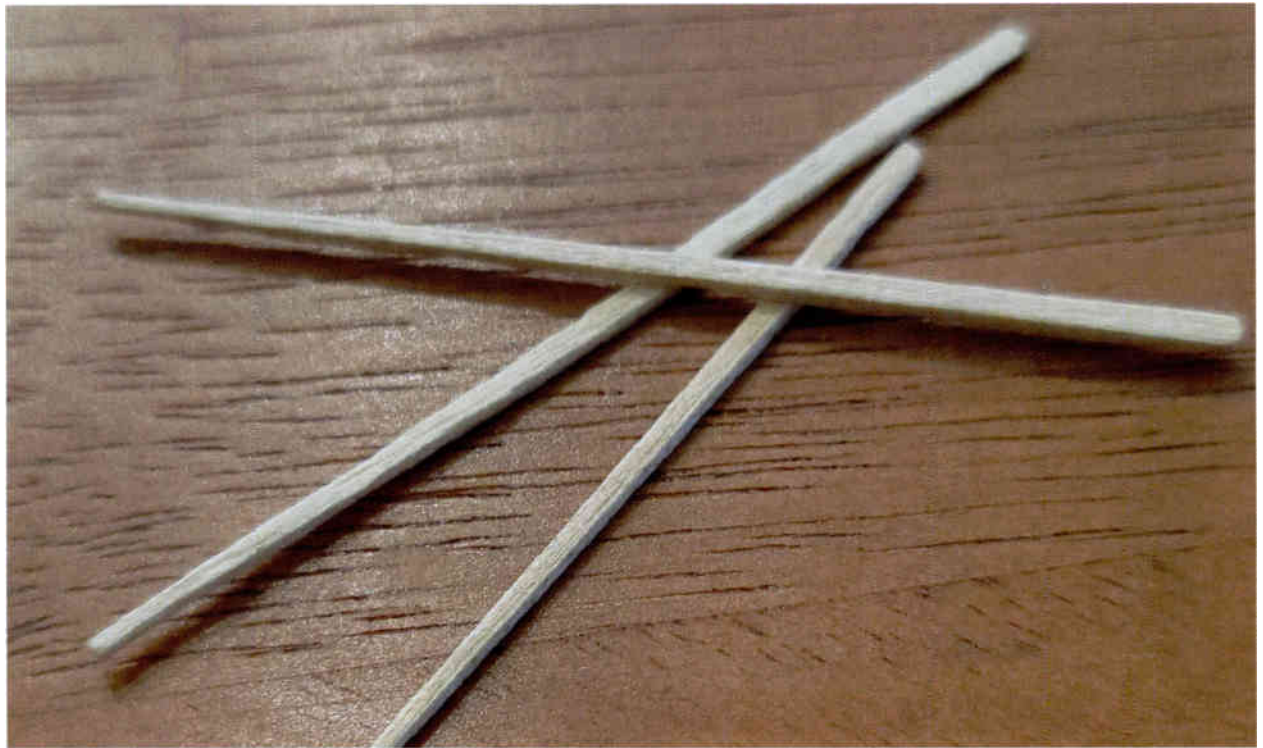
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John Bisset

CPBE

The author is in his 31st year of Workbench and has spent more than 50 years in broadcasting. 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.



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**A** recent issue of Crawford Broadcasting's engineering newsletter "The Local Oscillator" touched on the subject of budget season. Crawford Director of Engineering Cris Alexander, who also is the technical editor of Radio World Engineering Extra, urged his chief engineers to focus on infrastructure as they prepared their '22 capital budgets.

CBC's chief in Alabama is Stephen Poole, CBRE, AMD. He writes that seasons of heavy wind and rain have taken their toll at several of his sites.

For instance, at one transmitter building, Stephen noticed that the steel door had a loose hinge. Closer inspection showed that the heavy door had a wooden frame, and exposure to the elements had caused the wood to rot and pull away from one of the hinges.

So much for site security! But this is why we always look around with a fresh eye whenever we visit a site.

Stephen isn't looking forward to the replacement project, because that door and steel frame were sold as a complete unit, and the frame is embedded in the concrete of the

building. I'm not aware of a quick fix for his problem; ideas welcome!

However, when you are dealing with loose hinges on a wooden frame, here's a tip that I picked up from a handyman years ago:

If a wooden door is sagging, it may be that constant use of the hinges has worn away the frame so there's nothing for the screw that holds the hinge to "bite into."

If the hinge screws just spin around when you try to tighten them, remove the screws one at a time and stuff several toothpicks into the wornout holes. Shove the toothpicks in as far as they will go, then break off or cut the protruding excess so they are flush with the door or frame. Reinstall the screw. You should notice a markedly tighter fit as the screw bites through and compresses the toothpicks.

This is not a permanent fix but it should secure the door until you can schedule installation of a replacement door.

By the way, if the frame is rotted, try adding wood glue with those toothpicks.

When winter weather approaches as it is for many readers, these tips may buy you a little time.



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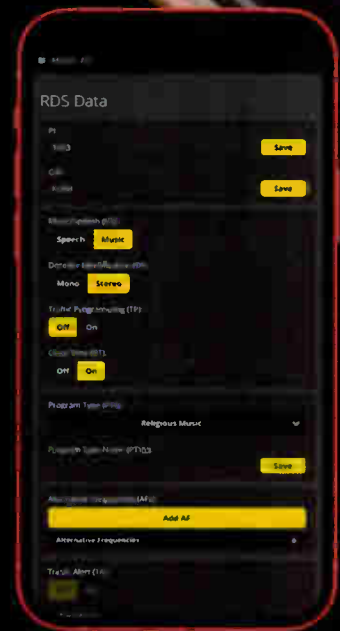
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## Seal those crevices

In the same issue of the CBC newsletter, Mike Kernen, the chief of Crawford's Detroit cluster, wrote about dealing with transmitter site pests.

Now is a good time to investigate any infestation, starting with wasps. Liberally spray wasp repellent around overhangs and vents. If you can arrange an overnight session, place one of those super-bright LED cordless flashlight inside your ATU or other outside enclosure (with the power off, of course!), and in the dark, look for any escaping light as you walk around the structure.

Mice and insects can squeeze into amazingly small holes and crevices. Seal any visible holes. Remember that for larger entry points, stainless steel or copper wool combined with a caulk-type sealing compound works best. Shop for stainless steel or copper wool in the kitchen supply department of a grocery, hardware or dollar store. (Regular steel wool will rust, causing its own set of problems.)

Do like Mike and include an electrical inspection of the wiring to your towers. Combine this check with your quarterly tower inspection — whipping winds can loosen or break straps or black ties securing conduit.

The weather took a toll on one of Mike's Austin Ring transformers that used to couple tower light AC voltage across the base of the tower. The primary winding needed to be rewrapped.

Again, with the power off, clean and dry the surface of the winding. Then brush Glyptal Red Insulating Paint on the transformer, followed by strips of gauze; allow them to dry,

and then repaint. The Glyptal has a high electrical insulating characteristic. The idea is that the Glyptal and gauze form a smooth coating around the transformer core.

Glyptal is not cheap; a quart costs more than \$60 on Amazon. But the compound effectively seals and insulates the Austin Ring windings.

Repairing and resealing is far more affordable than having to replace Austin Ring transformers.

Visit [www.glyptal.com](http://www.glyptal.com) to read about its line of insulating and varnishing products. (Bonus tip: Put a dab of this paint on any nut that you want to keep tight, or on the edge of a potentiometer that you don't want users to adjust after it has been calibrated. It's just a little extra peace of mind.)

## Who knows where you are?

Advice that goes without saying sometimes needs to be said anyway.

Contract Engineer Allen Branch wraps up our inspection column by reminding us that whenever we're headed to do work alone at a remote site, we should let someone know where we're going and when we are planning to be back.

Also bring bottled water and a couple of protein bars in case the weather or a vehicle problem strands you. A roll of paper towels and a blanket in the trunk can come in handy. We have written before about other helpful supplies to keep at your remote site and in your car or pickup.

PS: Recently, one of Allen's engineers went to a site and found several spent .22 caliber shell casings on the ground by the entry gate. There was no apparent damage, but let's be careful out there. 🗺️

**Above**  
The door at a transmitter site shown at left is made of steel but its interior wood frame has rotted from exposure to rain and wind. Toothpicks can help you to build up the loose screw holes. Place them deep into each hole as shown at right, then trim off the ends and reinsert the screw.

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COMPATIBLE**

**Writer**  
Tom  
Vernon

The author wrote about Sennheiser's wireless mic proposal in August. Read it at [radioworld.com](http://radioworld.com), search key term WMAS.

# Debate over WMAS specifics heats up

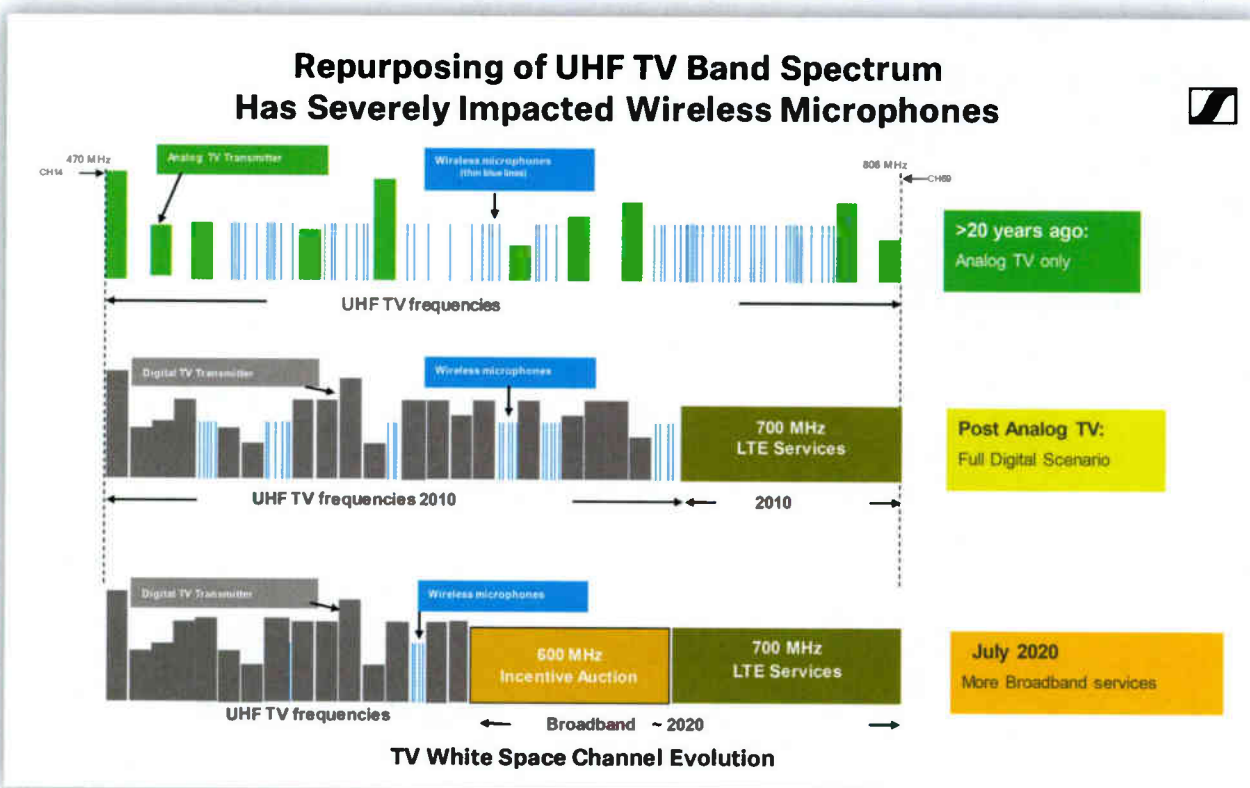
Wireless community and other stakeholders find devil is in the details

In August we told you about the notice of proposed rulemaking submitted by Sennheiser that asked the commission to formally define the Wireless Multi-Channel Audio System as a new class of wireless mics. The company also requested that WMAS be allowed to occupy up to a 6 MHz channel bandwidth.

Late this summer, followup comments were filed, with interested parties reacting to one another's ideas.

## Worried about interference

Lectrosonics expressed concerns that the proposed systems, by virtue of the wide bandwidths they occupy, will harm access to spectrum in situations where multiple



**Right**  
In this graphic, Sennheiser made the case that spectrum demand has crunched wireless applications.

The advantage, according to Sennheiser, is that by digitally combining signals from multiple devices into a 6 MHz channel, intermodulation issues would be eliminated while permitting denser use of the spectrum and reducing power density across the channel.

Shure has also been a supporter of the WMAS concept in general.

As we reported, the proposal had generated a flurry of comments from several parties, most generally in agreement with Sennheiser's concept of WMAS but with varied suggestions on how it could be tweaked and improved.

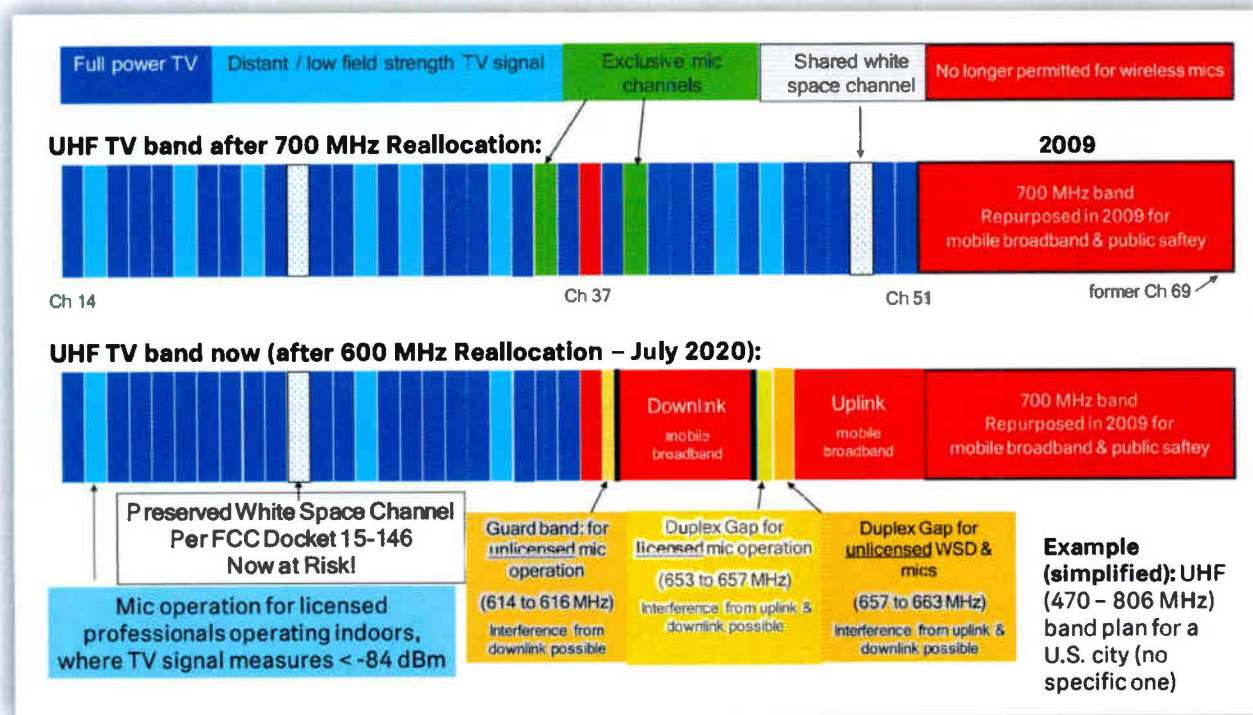
operators must share a limited amount of spectrum.

It added its support to a key recommendation from the National Association of Broadcasters. Essentially, the NAB asked the commission to limit the use of WMAS to large events. Lectrosonics agreed with the NAB that the FCC should set a minimum threshold of 10 audio channels used by a single entity, and that the audio channels be under the control of a single entity, so that there would be a single point of contact for other wireless microphone operators.

Lectrosonics agreed with Shure that the commission should permit Part 74 WMAS operations in the VHF-TV bands (54-72, 76-88 and 174-216 MHz), the UHF-TV band



# Wireless Mics



**Left**  
Another slide from Sennheiser on changes in available spectrum. The top bar is a color key to the rest of the graphic.

(470–608 MHz), the 653–657 MHz segment of the 600 MHz duplex gap, 941.5–944 MHz, 944–952 MHz, 952.850–956.250 MHz, 956.45–959.85 MHz, 1435–1525 MHz, 6875–6900 MHz and 7100–7125 MHz (“6-7 GHz”) bands as proposed in the NPRM.

However, Lectrosionics disagreed with Shure’s idea that the commission allow unlicensed WMAS operations and adopt technical rules for Part 15 WMAS technologies.

The operation of unlicensed wideband WMAS systems in situations where spectrum availability is limited, said Lectrosionics, incurs the risk of interference to licensed wireless microphone operations. They added that unlicensed users can continue to operate narrowband wireless microphones as in the past.

Lectrosionics favors a sliding scale for Part 74 WMAS power levels. While Shure proposed power spectral density (“PSD”) levels up to 750 mW per megahertz for Part 74 users based on the 250 mW limit for LPAS devices and a minimum spectral efficiency of 3 channels per megahertz, Lectrosionics says in its experience, a power level of 50 mW is typical. This, the company says, should be taken as the basis for sliding scale power spectral density limits.

The company also weighed in on whether the commission should reallocate the 6–7 GHz frequencies now designated for wireless microphones. It sided with Shure, saying in part, “this allocation has great promise for wireless microphone usage and that wireless microphone manufacturers, including Lectrosionics, are planning to develop systems that operate there.”

Finally, Lectrosionics added that the commission

should require a minimum spectral efficiency of three audio channels per MHz for WMAS technology, and the maximum bandwidth should be limited to 6 MHz, but no minimum bandwidth requirements should be imposed.

## Not just for large events

Waves Audio Ltd. agreed with the value of harmonizing WMAS regulations with European Telecommunications Standards Institute standards, but disagreed with the use of the ETSI emission mask. That, it said, would force manufactures to use cost-prohibitive measures in order to comply. Rather, the company suggested the commission adopt the emissions mask Waves proposed in its own initial comments.

Waves advocates for the commission to adopt a minimum efficiency level of three channels per MHz. It

**“ The spectrum needed for local broadcasters to operate wireless microphones is already scarce, and overbroad authorization of WMAS may exacerbate this problem. ”**

noted that the proposed six channels per MHz advocated by the NAB was not tenable, and agreed with Shure, which said three channels was optimal.

Waves and Shure disagree as to whether the commission should mandate a measurement of audio quality, with Waves arguing against. It said the state of the art in wireless microphones delivers "unheralded fidelity," that codec audio quality is a major source of innovation and that any attempt to regulate sound quality could stifle this kind of creativity.

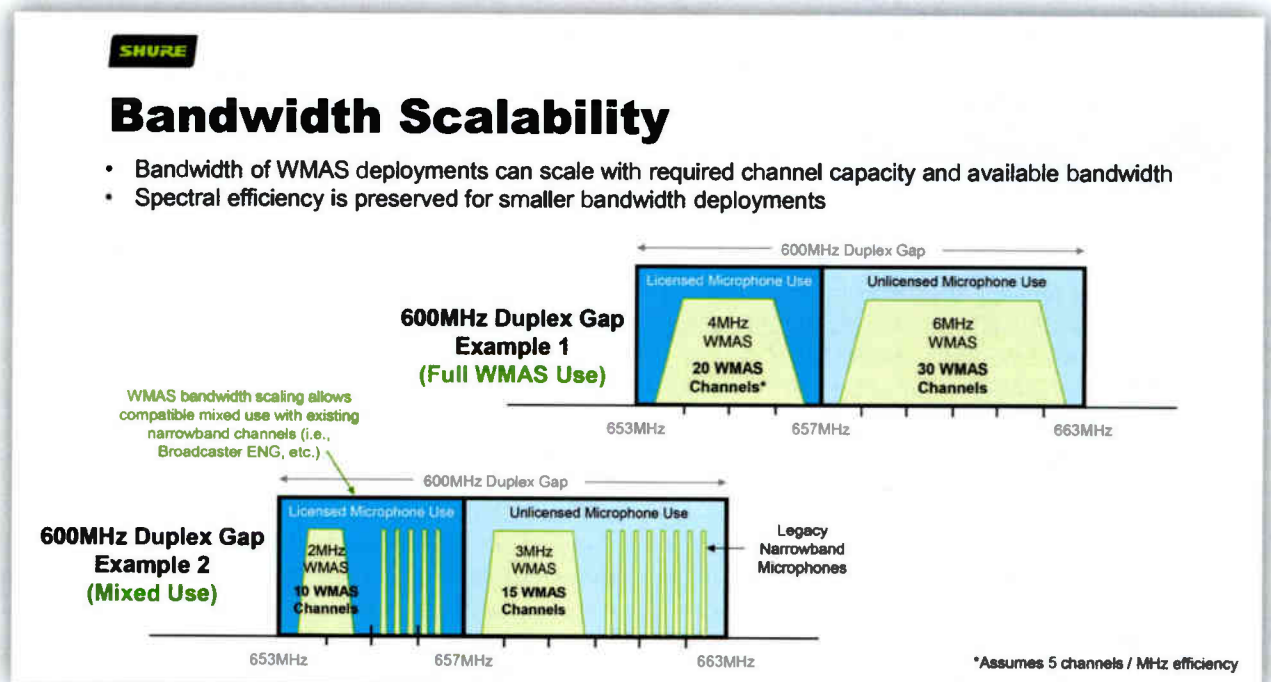
Waves disagreed with the NAB's recommendation to constrain WMAS usage to large events, citing a number of reasons and calling this an artificial cap. A 10-channel minimum usage requirement would, according to Waves, probably cause users to take up more channels than

such that when using less than three audio channels a system must operate under the definition of narrowband.

Waves took issue with the NAB stance opposing WMAS operations under Part 15 at lower power. The company said that permitting Part 15 users will lead to higher and quicker adoption of the emerging standard, resulting in higher efficiency use of spectral resources overall.

## Appropriate guardrails

NCTA—The Internet & Television Association focused on the need for coexistence measures for any WMAS operations in the 6 GHz band. It said the FCC thus would acknowledge the needs of wireless microphone users while allowing existing BAS and unlicensed users in the 6 GHz band to thrive.



they need just so they can use WMAS. Alternately, they might purchase both a conventional wireless microphone system along with a WMAS system.

Further, Waves wondered how such a requirement would be enforced. And even if it could be, the company said limiting use to large events would deprive smaller and mid-scale users of the advantages of WMAS; that in turn would slow the adoption curve, which would cause manufactures to reduce their investments in the technology.

Waves said the commission should scale WMAS bandwidth based on the number of carriers transmitted, rather than the number of audio channels used.

In this regard, the company strongly disagrees with the approach recommended by Shure, where the spectral efficiency of WMAS systems would be no less than an average of three channels per MHz across all channels,

Specifically, NCTA asked that the commission cap the total power permitted in a single WMAS channel; require that WMAS channelization be harmonized with BAS and 802.11 Wi-Fi channelization to avoid WMAS channels overlapping more than one of the channels of these other services; allow WMAS channels of up to six MHz, but not more; permit only Part 74 licensed WMAS use in 6 GHz; and restrict use to large events that require the use of many audio channels at the same time.

ViacomCBS sided with the NAB in asking the commission to place limits on the use of the technology, to ensure that it does not impede broadcasters from engaging in newsgathering and coverage of local events of interest to their communities. The company added, "The spectrum needed for local broadcasters to operate wireless microphones is already scarce, and overbroad authorization of WMAS may exacerbate this

**Above**  
A Shure image highlights the concept of scalability.

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「 FUTURE 」

problem. Appropriate guardrails on WMAS operations are needed to avoid disruption to local news and event coverage.”

Sennheiser stated its support for preservation of a vacant UHF TV channel for wireless microphone use in all market areas of the United States. It said that petitions for reconsideration filed by both Shure and Sennheiser have broad support, with 183 of the 184 parties submitting comments supporting adoption of a vacant low-band UHF TV channel for wireless mic operations.

Cisco Systems, Facebook, Qualcomm and Intel filed jointly. They focused their reply comments on proposals for the 6 GHz and 7 GHz bands.


They began by noting that they all produce unlicensed technology and thus are now stakeholders in the band.

## Do no harm

Microsoft Corp. stated its opposition to WMAS operations in the 6875–6900 and 7100–7125 MHz bands, asking the FCC to remove “needless regulatory uncertainty” and avoid economic harm.

Microsoft sided with the NAB in opposing unlicensed WMAS operations, which Shure and Sennheiser support. At issue, according to Microsoft, is the use of unlicensed WMAS operations as an opportunity to circumvent the FCC’s current eligibility threshold for unlicensed users to obtain a Part 74 license.

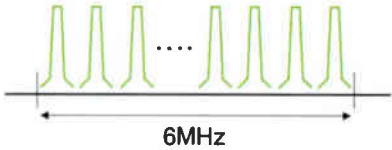
Shure responded to comments about the company’s recommended WMAS power levels of 750 mW per megahertz PSD and unlicensed 150 mW per megahertz PSD.




## WMAS Bi-directional Microphone Example

- Since WMAS would replace N narrowband audio channels, it should be compared to multi-channel narrowband deployments, particularly when considering downlink transmitter requirements.

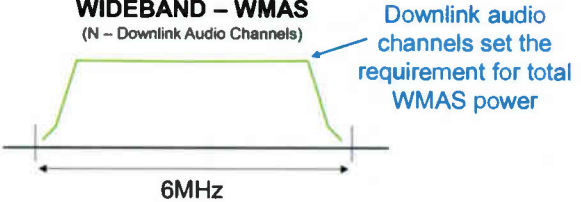
**NARROWBAND**  
(N – Downlink Audio Channels)




6MHz



**WIDEBAND – WMAS**  
(N – Downlink Audio Channels)



6MHz



The four companies do not believe that proponents have established a case for WMAS in 6 and 7 GHz. Noting that Sennheiser had not sought rule changes to permit WMAS in these bands, they believe the record casts substantial doubt on the technical wisdom of doing so.

At the same time, they believe the record reveals minimal use of wireless microphones under LPAS rules. The consequence, Cisco and Facebook wrote, is that there is “negligible” harm in directing wireless microphone operations to the other bands that have proven to have strong utility for the wireless microphone user community.

Finally, they said that allowing a WMAS allocation to proceed at 6 and 7 GHz creates uncertainties for unlicensed deployments that could slow the pace of innovation and uptake of new RLAN technology.

It noted that these are based on equivalency to power levels permissible under existing narrowband rules, and said they have worked very well for years without raising reported instances of interference to co-channel or adjacent channel operation.

Shure also urged the FCC to align its WMAS regulations with the ETSI harmonized standard with respect to transmit mask requirements and intermodulation distortion limits.

The NAB’s own reply comments expanded on its concerns over spectral efficiency.

“While we continue to support the use of WMAS technology on a secondary basis subject to reasonable restrictions, we urge the commission to authorize WMAS only on terms that will actually help alleviate spectrum congestion rather than risk making it materially worse.”

**Above**  
One of several examples that Shure provided to the FCC of an application for WMAS bidirectional mics.

## Tieline Gateway Line Now Supports Ravenna



New firmware from Tieline allows its Gateway and Gateway 4 codecs to support Ravenna.

"Integrating Ravenna support facilitates interfacing easily between Gateway and Gateway 4 codecs and Ravenna devices over AoIP networks," the company stated.

The announcement was made by Tieline VP Sales APAC/EMEA Charlie Gawley, who said the Gateway platform now complies with AES67, ST 2110-30, NMOS and Ravenna.

The firmware is free for current users. Info and download are available on the support page.

Tieline highlights its codecs for applications requiring the streaming of low-latency, high-quality audio over wired and wireless IP transport channels and for integrating compressed and uncompressed IP audio streams around the broadcast plant. "The codecs are often gateway devices in IP networks bridging between wide area network (WAN) nodes that may include the broadcast plant, other studios (interstudio links), production facilities and live events," it says.

Info: [tieline.com](http://tieline.com)

## Nautel Introduces Online Testing

Nautel now offers an online Factory Acceptance Testing program for the buyers of its transmitters.

"A FAT is a set of predefined tests that many customers must witness being completed in real time as part of project specifications," the company stated. Nautel can use meeting platforms paired with interfaces such as Team Viewer to allow customers to witness transmitter testing as part of their acceptance process.

"The Nautel AUI and multiple pieces of measurement equipment are employed along with a suite of cameras, wireless microphones and personnel to conduct the tests. Customers are able to communicate with their transmitter(s) via the AUI and view performance measurements throughout the final testing process," it stated.



Info: [nautel.com](http://nautel.com)



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## Writer



**Paul Kaminski**  
**CBT**  
 Veteran radio news reporter and host of msrpk.com's Radio-Road-Test. Twitter: msrpk\_com

# In:Quality puts a twist on the ol' codec

Opus, SIP, Raspberry Pi and XLR are a recipe for studio-grade audio

**M**oving studio-grade audio from point to point is much simpler thanks to browser-based programs that use the open source Opus codec.

One such modality is ipDTL from U.K. company In:Quality, which I've used with success (*radioworld.com*, search "kaminski ipDTL"). This web application uses the Opus codec and allows the originator to send up to six bidirectional links for connection.

This begs a question: How can this process be simplified for two-way sessions (voiceovers, program and news contributions) that won't tie up a laptop or desktop?

The founder of In:Quality, Kevin Leach, worked for the BBC as a producer and audio engineer. He says using ipDTL from a computer is a process that depends on configuring settings such as audio device selection in the right order to deliver studio-grade audio.

That's not a problem for broadcasters and technical people. Leach says In:Quality's SIP codecs were designed to increase simplicity and reliability for those who want a simple way to connect to a radio station.

"Once you put everything in a simple box [Raspberry Pi] it takes away a lot of complication. The USB SIP codec lets a user connect using a simple USB microphone and headphones, or a USB soundcard. The XLR SIP codec has Neutrik XLR-TRS connections for analog audio,



and can be configured to move audio on any network that recognizes AES67 as a protocol. It is available in a plain version, Zero, that is externally controlled, and a touchscreen-controlled version, Touch, that has an integrated touchscreen.

## Raspberry Pi

Here's what goes in that Raspberry Pi box: a software codec that uses the EBU 3326 protocol and SIP to make calls. The preferred codec is the open source Opus codec, but the software can recognize G.722, G.711 and, where still available and as part of a subscription, ISDN.

Purchasers of In:Quality codecs receive a one-year subscription to the sip.audio service (<https://sip.audio>), which is part of the In:Quality family. All sip.audio subscribers can make calls and connect to any other SIP client that allows incoming SIP calls.

The sip.audio website has a worldwide directory

**Above**  
 XLR SIP codec  
 Touch front.

**Right**  
 XLR SIP  
 codec rear.





of facilities and contributors (subject matter experts, voiceover artists, etc.) who are sip-enabled.

When connecting these codecs, In:Quality strongly recommends that they be connected to a network via Ethernet. In:Quality cautions that some dynamic microphones might not work well with the XLR Codec due to the available gain in the preamp.

I configured the XLR codec to transmit and receive audio through my Allen + Heath ZED-10. Settings and configuration for the unit were done from a laptop on the same network. Other settings and adjustments can be made from the codec's touchscreen. Line-level mix-

**“Once you put everything in a simple [Raspberry Pi] box, it takes away a lot of complication.”**

minus codec transmit was fed via the ZED-10's FX send; the line-level codec receive was connected through a line-level channel, and the codec was connected via Cat-6 to a network switch and router.

Clean audio was transmitted and received between my studio and In:Quality in Manchester, England, KHAS(AM) in Hastings, Neb. and WKBX(FM) in Kingsland, Ga.

Brad Beahm is the operations manager for KHAS/Platte River Media in Hastings Neb. On a given Friday, he'll have five separate football broadcasts on five separate stations in his cluster, between Hastings, Grand Island and Kearney, Neb.

"In the past we've used Skype and have had a few issues, like having a computer do a Windows update, sound card settings getting changed and forgotten Skype passwords. With the In:Quality SIP codecs, we give them the box and equipment, tell them to push the button for whatever station they're on and go from there."

Beahm has the XLR codec in his equipment rack. He deployed a Touch SIP codec for a newscaster who had to move from Nebraska to take care of a relative. The use of the codec allowed that newscaster to continue doing news for the morning show. When asked about the quality of the signal



**Product**  
**In:Quality**  
**XLR SIP Zero**  
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Some dynamic mics may not work well with the XLR codec

### Info

[inquality.com](http://inquality.com)




from Colorado to Nebraska, Beahm said, "Our morning guy asked if the newscaster had a fan running during the newscast. The signal was clear enough that the fan in the background could be heard. That's a good problem to have."

Neal Ardman is the president of NIA Broadcasting and Broadcast Partners and WKBX in Kingsland, Ga. His station uses In:Quality codecs for hosts on remote and for high school football, for which the station will use a dedicated Verizon Mi Fi on Wi-Fi or 5G.

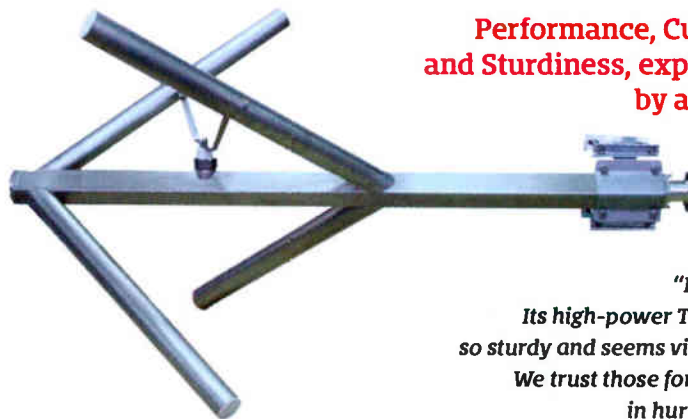
Ardman suggests that those using In:Quality equipment at home ensure that there's enough bandwidth on the home network. "Make sure the talent working from home has a good quality soundcard too, and that's usually not the one that's built into the computer."

He also shared a security tip about spoofed IP addresses: "Make sure that your router is set up to accept connections to your codec only from known IP addresses. That way, you don't have to worry about spoofed IP addresses."

The XLR Codec from In:Quality has a list price of \$449 (Zero) and \$499 (Touch with integrated touchscreen). 

**Above**  
XLR SIP codec Zero.

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DAVID HOXENG, ADX Communications, Pensacola, Florida

**\* TFC2K arrays can be rated up to 75 kW power handling.**



Mark Lapidus

The author is a longtime multi-platform media, content and marketing executive and RW contributor.



**Read the report**

You can access Audacy's report at <https://audacyinc.com/state-of-audio/>.

# Audacy's audio manifesto reviewed

Your sales staff should understand this playing field and discuss it with clients

Entercom picked the Audacy name for a reason. Chairman David Field told his hometown newspaper the Philadelphia Inquirer that the old name no longer fit: "Entercom reflected radio only. We've outgrown it. It's broader than that, and it also didn't fit our aspirations."

Audacy's aspirations are now on full display in a wonderful new piece titled "State of Audio — What's Next & What Advertisers Need To Know."

It'll take you at least 30 minutes to absorb this detailed 40-page promotional piece. Worth it? Yes! This is a must-read for everyone in broadcasting, podcasting, audio services or advertising. The nicely designed layout makes it easy to find sections that are of specific interest, but this statement of purpose is best digested whole.

It begins with a lovely, if hyperbolic line: "Advertisers who want to engage deeply with audiences are embracing Audio like never before."

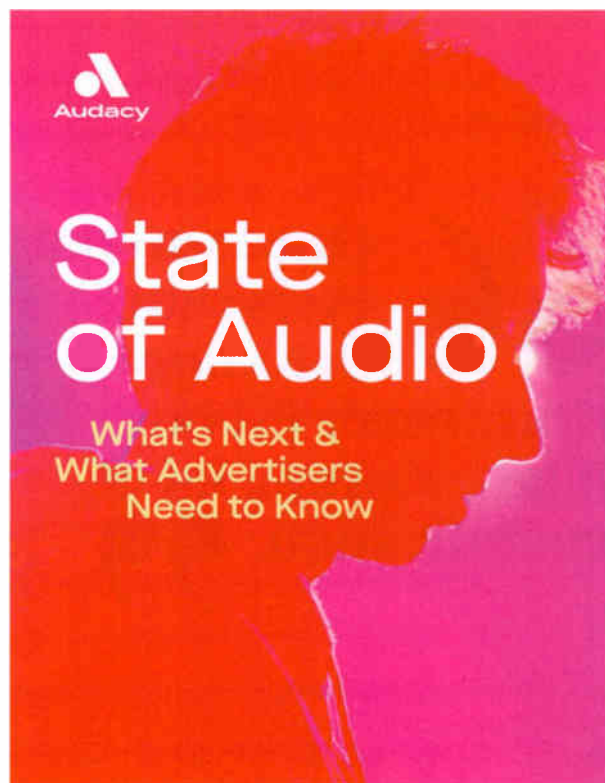
This intro makes me smile because it's mostly true and offers promise for the future. The amusing part is that young media buyers will likely believe this line, not knowing much about broadcast radio's many decades of dominance prior to television.

While it may appear I'm poking fun here, I'm impressed with the way Audacy restates audio's selling proposition, saying, "New research affirms that Audio stirs emotion like no other medium."

Audacy Chief Digital Officer J.D. Crowley states: "In a world where screen time has reached a new and sometimes uncomfortable peak, it's the ears, not the eyes, that always connected most deeply. And it's the ears that are generating the most excitement and energy in media today."

So true. And it's so important that a generation of advertising newbies receives this education.

There are sections of metrics that lay out the growth of smart speakers, podcasts and at-home listening. Audio is described as an immersive experience, beating out video,



television and even social media. Your local sales staff should understand this playing field and be prepared to discuss it with clients.

There's a terrific section on podcast listening, revenue generation, and a proposition on how to reach youthful audiences. Celebrities are rightly repackaged as Influencers with instructions on how to utilize their trust to generate results. I particularly enjoyed the "right moment, right message" section on how dynamic creative can run at just the right moment to match the weather, sports or other events.

The final chapter paints a future for audio based on voice-commands (like shopping by voice), the cloud and the arrival of 5G. Nothing about the smart dashboard in a car, which seems like a miss.

The elephant in the room for our industry shows up on a graph from Edison Research on page 8, concerning the use of broadcast radio. There's an attempt to paint a rosy picture with broadcast radio commanding the largest percentage of audio listening at 39%. If accurate, that's a sad state of

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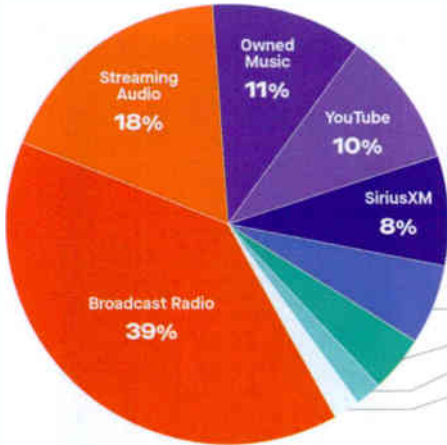
Images below and at right are from the Audacy report.

### WHAT'S ON?

Broadcast Radio commands the largest chunk of Audio listening by far, at 39% — with streaming Audio coming in second at 18%.

**Share of Ear**  
Share of time spent listening to Audio sources


Podcasts 6%  
TV Music Channels 4%  
Audiobooks 2%  
Other 2%



affairs. Those at the top would be wise to admit that it's past time to invest significant time, energy and money into stopping this decline and determine how to start a resurgence for broadcast stations.

Audacy has proven its prowess at positioning new forms of audio for the future.

The fly in the formula: According to RAB/Borrell Associates data, digital ad revenue in 2020 hit \$1.1 billion. This accounts for about 14% of total ad sales. While it's fantastic to see digital sales growing for radio, without broadcast station revenue, the business model doesn't work.

Can Audacy and other leaders leverage their clearly proven creativity to rejuvenate our core broadcast radio product? That's a manifesto I hope to read in the near future. 

## DYNAMIC CREATIVE

A few creative variations will make your messages hyper-relevant and effective in any moment. Let's take a look at three options each for weather and sports triggers:

WEATHER	SPORTS
<p><b>All clear?</b> Run your standard creative:</p> <p>"Sam's Hardware has everything you need to help you deal with winter weather."</p>	<p><b>Not game day?</b> Run your standard creative:</p> <p>"Angela's Pizza serves hot, fresh pies with the best-quality artisanal ingredients right to your door in 30 minutes or less."</p>
<p><b>Storm coming?</b></p> <p>"The storm's a-brewin', so hurry on down to Sam's Hardware for everything you need to survive the squalls. Shovels and salt, snow blowers and space heaters... And don't forget to check your antifreeze."</p>	<p><b>Game on?</b></p> <p>Hit a home run with your game-time eats from Angela's Pizza — delivered in 30 minutes or less. Call before the seventh-inning stretch, and we'll throw in a side of Angela's homemade garlic knots, fresh from the oven."</p>
<p><b>Storm is here?</b></p> <p>"As the snow flies, Sam's Hardware is open and making home deliveries on a limited basis. Let us know how we can help you dig out, from snow blowers to deicing salt. Visit us at <a href="http://www.samshardware.com">www.samshardware.com</a> and please, stay home and safe until the storm blows over."</p>	<p><b>Game won?</b></p> <p>"The Cubs brought it home, and Angela's Pizza wants to help you celebrate our hometown heroes! Come on in, call, or click before 10 p.m. tonight to get a free liter of Pepsi products with every large pizza or bucket of crispy Buffalo wings."</p>

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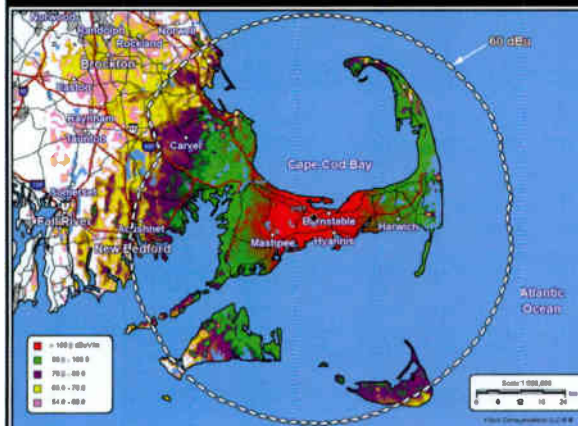
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# Eliminate local AM caps but don't touch FM

iHeartMedia again warns of "potentially catastrophic harm" from NAB proposal

*iHeartMedia thinks the FCC should eliminate the restriction on how many AM stations one company can own in a given market. But it opposes the "overly aggressive" proposal by the National Association of Broadcasters to raise or eliminate the similar cap on FM stations.*

*The company believes that within broadcast radio, AMs face a "growing and distressing competitive disadvantage" to FM stations, despite the role played by AMs in national security communications and the "outsized place of AM stations as trusted sources of local news and information."*

*That has been iHeart's position for some time. Now the company has reiterated its stance in a September filing with the FCC. The commission had invited comments to update its record in the still-open 2018 quadrennial review of media ownership rules.*

*This is an excerpt of the summary section of iHeart's filing:*

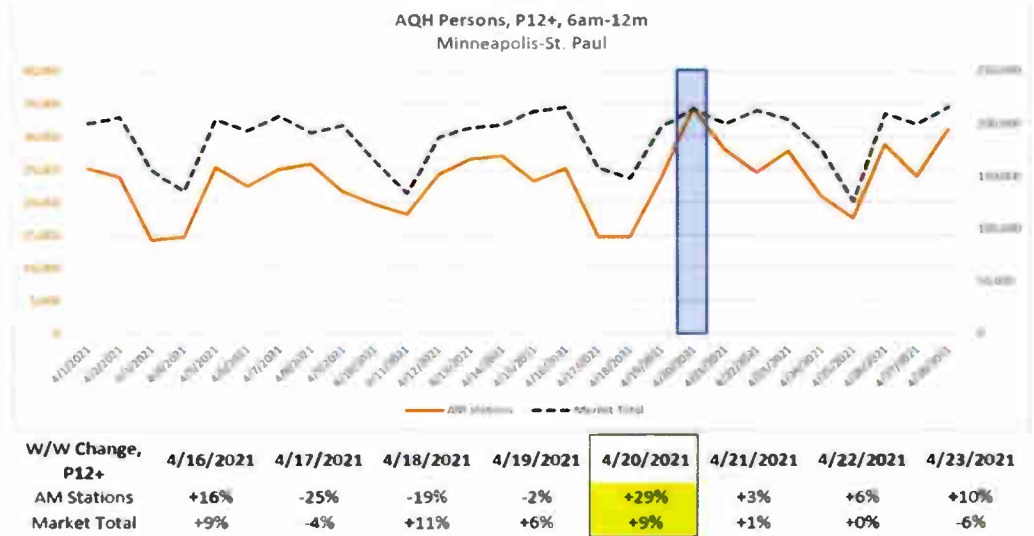
Legal developments subsequent to the closing of the original comment period in this proceeding have strengthened significantly the bases for iHeart's earlier advocacy.

The twisting course of the litigation challenging the commission's 2010/2014

Quadrennial Reviews has left the regulatory landscape as it was when the commission received comments and reply comments. Importantly, however, there has not been a meaningful opportunity to ascertain the impact on the marketplace of either the substantial deregulation effectuated by the commission's November 2017 Order on Reconsideration or its August 2018 Order establishing the Incubator Program.

The Supreme Court decision reversing the Third Circuit reaffirmed the commission's reasonable exercise of its authority in applying the broad public interest standard governing Quadrennial Reviews, implicitly rejecting the argument that competition should be the predominant

## Derek Chauvin verdict announcement (4/20/2021)



**Above**  
iHeart provided graphics like this one to emphasize the importance of AM radio to communities. It shows a surge in local AM listening on the day of the jury verdict in the trial of Derek Chauvin for the murder of George Floyd.



**More info**  
iHeart's filing went on to develop these arguments in more detail. You can read a PDF of the full filing at <https://tinyurl.com/rw-ihm-2>.

criterion for determining whether to retain, modify or repeal broadcast regulations.

The antitrust actions against Facebook and Google filed by the FTC and the Department of Justice, joined by the vast majority of state attorneys general, also have significant implications for this proceeding.

In the complaints in these cases, the federal government and the states have been explicit in arguing that the relevant advertising markets for the Big Tech companies are separate and distinct from the television and radio broadcast advertising markets and that broadcast radio and television are not substitutable for the social media and search services and related advertising markets of Facebook and Google.

Thus, the federal and state governments have taken the same position utilizing the same analytical framework regarding the relevant market as iHeart has advanced in this proceeding.

Finally, on July 9, 2021, President Biden signed an "Executive Order on Promoting Competition in the American Economy," reflecting the administration's view that excessive market concentration is harmful to competition.

Of particular relevance to the instant proceeding, the Executive Order encouraged agency heads to pay particular

attention to the influence of regulations on concentration in industries within their jurisdiction. Adoption of the NAB's proposal would be inconsistent with the thrust of the Executive Order on Competition.

### "Seismic events"

While these legal developments are directly relevant to this proceeding, the seismic events that have challenged our nation in the past two years also have a bearing on its outcome.

The COVID-19 pandemic, the pervasiveness of misinformation and disinformation on social media and hundreds of internet websites and its disruptive effect on our political processes, and a reawakening about the role race plays in our society following the murder of George Floyd, have underscored the critically important role broadcast radio plays in our country's life.

Consistent with the examples highlighted in iHeart's Comments, empirical listening data during the past two years continued to demonstrate that people tune to their local radio stations, especially AM stations, in times of heightened concern, both with respect to local, natural or human-caused disasters and at moments of acute national crisis.

Broadcast radio has been an indispensable source of official and factual information about the COVID-19 pandemic, including how best to avoid infection, where to get tested, local and regional infection rates, hospital capacity and the importance, efficacy and availability of vaccines.

Regarding the reexamination of the role of race in American society, iHeart launched the Black Information Network (BIN) in 2020, a 24/7 comprehensive, national, audio Black news service dedicated to providing a trusted source of continual news coverage with a Black voice and perspective. iHeart already has repurposed more than 30 local stations serving large Black populations, the majority of which are AM stations, to be additive to — but not directly compete with — existing Black-owned radio stations.

We continue to support the FCC's Incubator Program,



### How to submit

Radio World welcomes comment on all relevant topics. Email [radioworld@futurenet.com](mailto:radioworld@futurenet.com) with "Letter to the Editor" in the subject field.

believing that it should be afforded a meaningful opportunity to succeed in enhancing ownership of broadcast properties by women and minorities, an outcome that would be at risk were FM ownership limits to be relaxed or eliminated.

In light of the increased centrality of broadcast radio to our national information and communications infrastructure, sustaining its economic viability, particularly the more financially vulnerable AM band, should be of paramount concern to the FCC.


Whether measured by numbers of stations on air, audience listening or advertising revenue, broadcast radio has suffered from the broader economic fallout of the COVID-19 pandemic.

On the other hand, there are promising signs that broadcast radio will rebound, including the broader economic recovery, portending increased advertising, and dramatically increased driving in recent months, likely translating into greater audience listening.

It is premature, however, to predict the extent and contours of that recovery, and it is too soon to have reliable, empirical, economic data upon which the commission could make predictive judgments.

### "Targeted, moderate"

The net effect of these developments is that the positions taken by iHeart in its Comments and Reply Comments ring as true today — indeed, more so — as when we conveyed them to the commission more than two years ago. Accordingly, the commission should adopt a targeted, moderate approach to reforming the local radio ownership rules by eliminating only the limits on AM stations while retaining the current limits on FM stations.

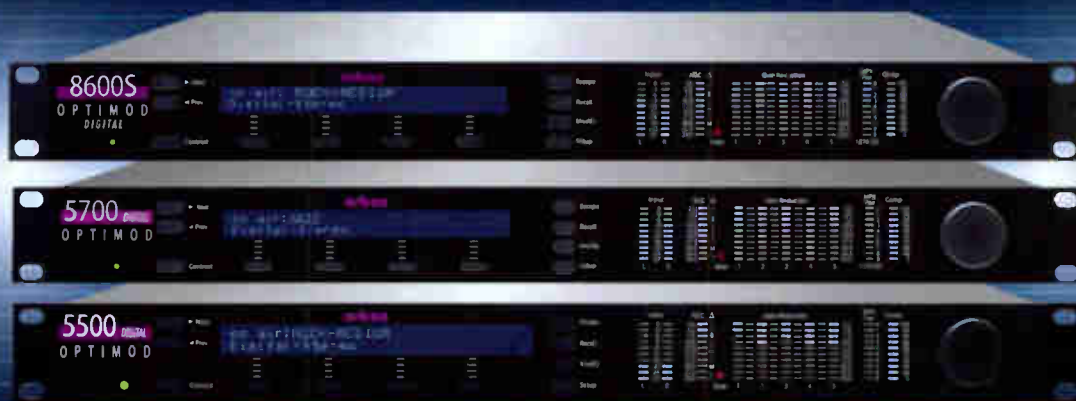
Doing so will avoid the potentially catastrophic harm that could befall AM stations were the commission to adopt the NAB proposal to deregulate substantially the FM band. Moreover, by maintaining the current FM subcap limits, the commission will ensure that the financial incentives essential to the success of the Incubator Program remain in place. The commission should be guided by the overarching principle of doing no harm. 

“Empirical listening data during the past two years continued to demonstrate that people tune to their local radio stations, especially AM stations, in times of heightened concern.”



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