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FUTURE

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BEST OF SHOW**2025**

RADIOWORLD

WINNER

Silent signals

"Certain stations are no longer the right strategic fit."

SDR on LPFM

Vlad Fomitchev has an idea and sees an opportunity.

You can plug, but will to play?

There are many ways to wire a 3.5 mm connector.









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FUTURE

Connectors.

Radio gets harder to find

Our place in vehicles is shifting dramatically



Paul McLane **Editor in Chief** adio is getting harder to find in the dash. What can be done about it?

For the second year, Ouu Inc. has compiled a study of how stations appear in the dashboards of the top 100 best-selling car models in the United States.

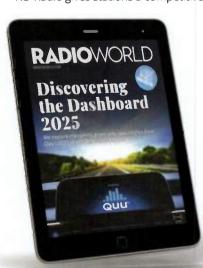
We recently published a Radio World ebook about the project in partnership with Quu. Here's a quick summary of its findings.

Every car Quu visited provides FM reception, and 98% have AM. But the mirroring platforms Android Auto and Apple CarPlay were right behind, as is SiriusXM. And

built-in streaming apps are growing quickly in cars.

Quu published six key takeaways:

- Most new models default to the last audio source played The authors argue that the digital dash is reshaping how drivers and passengers experience audio. "Stations should aim to be the last touch."
- AM/FM radio is still ubiquitous but harder to find and use Dedicated radio buttons were found in only 26% of the cars, a drop from 36% just a year ago. "Modern infotainment systems bury AM/FM radio in menus."
- The digital dashboard is packed with more audio choices "AM/FM radio is not competing with itself," the authors wrote. Radio needs to stay top of mind when personalized streaming, audiobooks and podcasts are a tap or a voice command away.
- Detroit is doubling down on built-in streaming apps Adoption of sources like Spotify, Amazon Music and TuneIn nearly doubled since last year. "U.S. automakers are prioritizing streaming over traditional radio," Quu found.
- Two out of three new models are HD-equipped The report argues that HD Radio gives stations a competitive advantage but that they need to



take advantage of it. "Better sound, album art and on-screen content make AM/FM radio more engaging."

 All new vehicles can display text. More than half can show images — "A station's in-dash appearance is an essential brand extension," the report concludes. "Implementation is no longer optional."

Find the ebook at radioworld. com/ebooks. And the Quu report and data are accessible at QuuReport.com. 30

THIS **ISSUE**

NEWS

- From the Editor
- Groups ponder RIS -"reductions in stations"
- **KNX** News christens new studio

FEATURES

- When a standard ... isn't
- Best of Show Award winners
- Who's Buying What
- Engineer eyes 26 new frontier SDR-powered LPFM

OPINION

NAB's roadmap for the FCC



Trump Targets Public Media Funding

President Trump in May ordered the federal government to stop funding National Public Radio and the Public Broadcasting Service. The Corporation for Public Broadcasting immediately responded by saying that it is not a federal executive agency subject to the president's authority.

Trump used an executive order seeking to accomplish what critics of the funding have been unable to do through action in Congress. The action is certain to be challenged in court.

"At the very least, Americans have the right to expect that if their tax dollars fund public broadcasting at all, they fund only fair, accurate, unbiased and nonpartisan news coverage," the order states. "No media outlet has a constitutional right to taxpayer subsidies, and the government is entitled to determine which categories of activities to

Trump said that CPB fails to abide by restrictions that it not contribute to or otherwise support any political party.

"Which viewpoints NPR and PBS promote does not matter," Trump wrote. 'What does matter is that neither entity presents a fair, accurate or unbiased portrayal of current events to taxpaying citizens."



But critics say Trump has sought to guash media voices selectively and use the power of his office to strike at his critics as well as a free press. NPR called the order "an affront to the First Amendment rights of NPR and locally owned and operated stations throughout America to produce and air programming that meets the needs of their communities," and an affront to the First Amendment rights of listeners

Federal funding is about 1 percent of NPR's own budget, but public media supporters have said that a loss of funding could hurt stations badly, especially small and rural stations, and undercut the local newsrooms that provide content to the network.

NPR reported that federal funds for public media in fiscal 2026 and 2027 would total \$1.1 billion, of which public radio would receive \$250 million

Shortly before the order, the CPB filed a lawsuit to stop the Trump administration from firing three of its board members, claiming the president has no power to do so.

TV Tech Editor in Chief Tom Butts contributed to this story.



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Writer



Randy J. Stine

The author wrote recently on the RW website about ice storms that damaged stations in Michigan.

Groups ponder RIS — "reductions in stations"

Some ownership groups have been shutting down underperforming signals

ome cash-strapped broadcast owners are shutting down radio stations at an eye-catching rate. A majority of the signals are on the AM dial, but some FMs have suffered the same fate.

Ceasing operations is a drastic move for companies trying to cut costs quickly and in some cases stave off bankruptcy.

"Instead of a 'reduction in workforce,' consider this a reduction in radio stations," said one industry observer.

Townsquare and Cumulus are among large companies that have shut down underperforming stations. AM stations are often the target because of high utility costs and a general loss of confidence in the AM band.

RadioInsight reported in March that Cumulus would shutter about 20 stations that month, including both AMs and FMs.

A Cumulus spokesperson told Radio World that the moves are part of an ongoing effort to optimize the

company's portfolio and allocate resources effectively across local markets.

"We have determined that certain stations are no longer the right strategic fit within their respective markets," according to an emailed statement.

"As a result, we have made the decision to suspend operations at these stations — an adjustment that impacts very few individuals — while we evaluate the best path forward, allowing us to focus on strengthening and maximizing the impact of our other brands."

The company said it is considering whether to change format or sell the stations.

Cumulus FM stations listed as silent in the FCC's Licensing and Management System in early May include WJBC(FM) in Pontiac, Ill., WLXX(FM) Richmond, Ky., KJMO(FM) in Linn, Mo., and KOLI(FM) in Electra, Texas.

Inside Radio reported that Cumulus took WLAW(FM) in Muskegon, Mich., off air in March.

Radio Management



Above

"ESPN Quad
Cities" was
KBOB(AM) and
an FM translator.
Townsquare
told the FCC in
March that due
to economic
conditions in
the market, the
licensee "was
forced to take the
station off the air
temporarily."

Meanwhile, Townsquare has cited "economic conditions in the market" as the reason for shutting off a number of AM stations as well as several FM signals.

In late March, Townsquare filed notice with the FCC to cancel the licenses of KVLL(FM) in Tyler, Texas, and WUPE(AM) in North Adams, Maine. It also requested temporary authority to go silent for another AM station in Maine and its FM translator.

Townsquare COO Erick Hellum told Inside Radio that the stations "were never big performers, but over the past few years losing money, with significant tower lease and utility expenses."

By the numbers

There are still more than 4,300 AM stations in the country. But as of the end of 2024 the total had declined about 8% over the past 14 years, according to Radio World calculations. And at the end of the first quarter of 2025, there were 60 fewer licensed AM stations than 12 months earlier.

The number of commercial FMs was virtually unchanged in the past 12 months at 6,625, but it is down by about 150 stations from pre-pandemic.

(The category of noncommercial FM is booming right now, with more than 300 new NCEs compared to a year ago for a total of 4,634, after a recent filing window for new CPs.)

Meanwhile the number of FM translators dropped a bit last year to about 8,800. Observers believe that if more AMs go silent, many will take their translators with them.

The commission does not maintain a list of stations that surrender their broadcast licenses, which makes it difficult to track specific trends.

Stations that go silent must file a notice of suspension

of operations in the Licensing and Management System within 10 days of ceasing operation, according to the FCC.

At this writing, according to FCC data, 118 AM stations, 105 FMs and 161 translators are licensed but silent. The commission does not track how that compares to past periods.

Voluntary cancellations of a broadcast license can be by formal letter or by using the cancellation function within LMS. Licenses can be surrendered or simply not renewed.

"No longer viable"

Smaller broadcasters also are turning off their AM signals. WIRY(AM) in Plattsburgh, N.Y., announced via Facebook in early March it would cease operations after 75 years. Licensee Hometown Communications cited increasingly difficult market conditions.

"The rise of digital platforms and social media has changed the way audiences consume content, leading to declining traditional radio listenership," it wrote on Facebook.

"Coupled with rising music royalty costs, a shrinking media sales force and decreasing profit margins, we have reached a point where it is no longer viable to continue broadcasting." The post did not give a final date of broadcasting for WIRY.

Of course the radio industry, led by the National Association of Broadcasters, has been working to convince Congress to require AM radio reception in new vehicles through the proposec AM Radio in Every Vehicle Act. That effort so far has drawn a lot of bipartisan support but not secured the bill's passage. Headlines about station closures aren't likely to help the effort. Opponents including the Consumer Technology Association have cited station numbers as indicative of a declining role for AM radio in American society.

We asked the NAB for comment on the reports of stations closing. Senior VP of Communications Alex Siciliano replied: "Local stations are making incredibly difficult decisions in a rapidly evolving and unforgiving media landscape. These aren't isolated cases. They're part of a broader trend that underscores the urgent need for the FCC to modernize its rules and level the playing field. Without meaningful reform, longstanding community stations are finding it harder to compete and survive."

Media brokers contacted by Radio World for this story do not find the trends surprising.

Today's evolving landscape creates situations where the cost of operating a radio license exceeds its financial benefit, said Gregory Guy, managing partner of Tideline Partners.

"With declining revenues, several factors can contribute to this, including technical issues, competitive disadvantages and expensive tower site leases made under different market conditions," he said.

Guy says occasionally stations are unsellable for various reasons in the current market. The "line between viable and non-viable stations continues to shift," he says.

"There are also fewer potential buyers considering a potential purchase. The selling process can take months or years in some cases."

George Reed, president of Media Services Group, says whether to shut off a station boils down to simple economics for most commercial broadcasters.



Back in BLAGK



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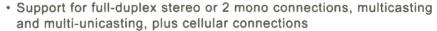
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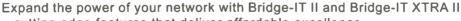




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Radio Management

"They may not have wanted to sell to a competitor and/or there may not have been any buyers. It is tough to compete with entrenched competitors with a standalone, even if it is an FM signal," Reed said.

However, further deregulation of media ownership caps, as proposed by the NAB and others, could be a game-changer, Reed says.

"There is no question that deregulation will help, perhaps save, the radio business. The competitive landscape has changed dramatically since the Telecommunications Act of 1996. The FCC was late by two decades on cross-ownership," Reed said. "Thankfully, Brendan Carr's FCC appears to recognize the current crisis and be willing to deal with it."

Longtime industry observer Jarry Del Colliano recently wrote in his Inside Music Media newsletter that he expects further station cutting.

"This trend will not only continue but increase as consolidators have run out of ways to cut enough expenses to avoid bankruptcy," Del Colliano wrote this spring. He expects other major groups may employ the same tactic.

We have determined that certain stations are no longer the right strategic fit within their respective markets.

Beasley has several FMs listed as silent in the FCC LMS window. A company spokesman said WCHZ(FM) in Warrenton, Ga., was off the air as the result of an executive decision to cease programming. In addition, WGUS(FM), licensed to Ellenton, S.C., has been off air since Hurricane Helene last summer. It's not clear if those stations will return to the air. A message sent to a Beasley spokesperson seeking further comment was not immediately returned.

KNX News Christens New Studio

KNX News, 97.1 and 1070 in Los Angeles unveiled its new Studio One and newsroom this past winter.

For nearly 20 years, KNX had operated out of the third floor of its Wilshire Boulevard studios on L.A.'s Miracle Mile. Audacy's music stations in the cluster already had relocated to the second floor. This project moved KNX News to that floor too.

Design planning began in 2023 and construction commenced last summer.

Audacy said the project relied heavily on its internal resources.

Tracy Schutt, workspace manager with the company's corporate real estate team, oversaw planning for the space. L.A. Director of Technical Operations Damon Stewart and KNX Director of News & Programming Alex Silverman led the local team.

That group included Rich Newell, Wayne Howard, Rick Rippey, Justin Baczek, Will Ellison, Jim Blakely, Ivan Morales, Kevin

Graham, Paul Donovan and Rick Rapalee. Former L.A. Chief Engineer Lynn Duke came out of retirement to lead the newsroom integration. Cameron Boswell of Inrush Broadcast Services provided assistance.

The renovation included a gutting and rebuilding of the main air studio, as well as a refit of traffic and production studios. The build features an SAS audio routing backbone. KNX uses WideOrbit, Audacy's

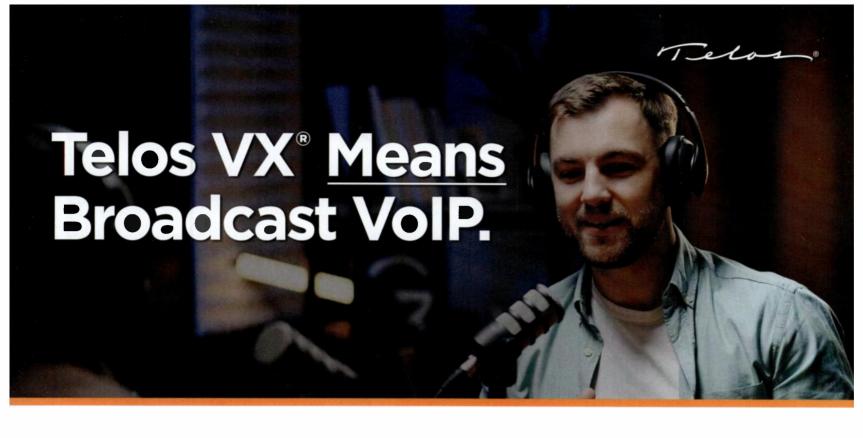


standard for automation, and NewsBoss for content management. The new broadcast studios feature AKG C214 large-diaphragm condenser microphones.

The new KNX newsroom includes 15 workstations with sit/stand desks and Electro-Voice RE320 microphones. Each functions as a production studio with audio routing capabilities, to maximize spatial efficiency. The newsroom also features an editor's desk as the hub for newsgathering operations.

See more photos and read about more studio projects in the ebook "Amazing Radio Studios 2025" at *radioworld.com*.





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Workbench



John Bisset CPBE The author is in his 34th 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



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When a standard ... isn't

How many ways can you wire a 3.5 mm plug?

roadcast engineer and frequent tipster Dan
Slentz was frustrated by the lack of a standard
when it comes to 3.5 mm microphone plugs.
So he put together the cheat sheet shown
below. Print or copy it out and keep it handy,
or take a picture and keep it on your phone.

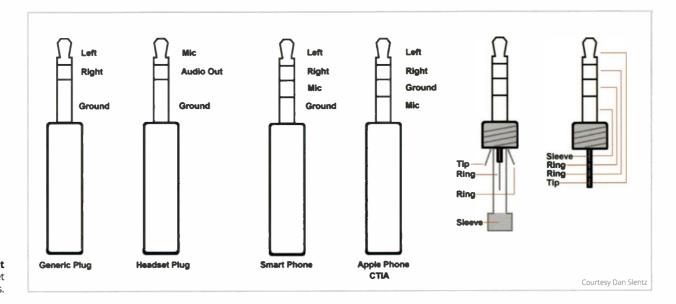
You never know "which" standard you will encounter. And if you have "reminder images" of your own that are helpful in your work, share them with me at johnpbisset@gmail.com.

Emergency STL

I told you about consulting engineer Frank Hertel's purchase of a reasonably-priced portable DVD writer that supports M-DISC, a version of DVD used for archiving files. Archived files are expected to last 1,000 years.

Well, Frank has another gem. He found this one on AliExpress.

It's a \$56 VHF/UHF receiver that covers 25-999 MHz.



Right Dan's cheat sheet for 3.5 mm plugs.





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This could come in handy for contract engineers. With its external antenna jack and audio output jack, in a pinch it would substitute for an STL receiver.

Now, it has a maximum bandwidth of about 5 kHz, but if you turn the STL transmitter modulation down to 10 kHz deviation (instead of the normal 50 kHz) the audio output is quite good.

Keep in mind that this is mono. But in an emergency, at least the station is on the air.

The unit can run on its internal battery or a 5 volt wall wart. Go to the AliExpress site and enter HanRongDa HRD-757 Multiband Radio.

Frank also shares a useful IP address lookup/location finder he found online. You type in the IP address to obtain real-time information associated with that IP address, including country, city, ISP and geographic coordinates.

The site is one of many tools provided by the Web, Network and Security Toolbox published by Intech DC. Find out more at https://tools.intechdc.com.

Breadboarding virtually

Frequent tipster Paul Sagi has designed a lot of circuits in the course of his career. He shares an online, in-browser toolbox for schematic capture and circuit simulation. The Circuit Lab site permits design and testing of analog and digital circuits prior to building a prototype. Set up your account at www.circuitlab.com.

Speaking of tools

The multi-tool gets some competition with this heavy-duty, multifunctional set of pliers sold by Mavigadget.

What caught my attention were the pictures of the tool cutting through chain links and lock hasps — even a screwdriver blade. You can also strip wires and adjust its wire-stripping blade.

These heavy-duty pliers from Mavigadget promise to cut through chains, lock hasps or the blade of a screwdriver.



The pliers are constructed using chrome vanadium alloy steel, and the symmetrical clamp head and teeth provide a firm grip. There's also a crimping groove to crimp electrical connectors efficiently. The pliers cost less than \$50. Enter "Multi-functional Heavy Duty Strong Pliers" in the search block at https://mavigadget.com.

Above

In an emergency, this VHF/UHF radio can be used as a spare STL receiver.

Below

In addition to stripping wires, these pliers wi I cut through chain links.

Transmitter site checks

From time to time, I like to include small maintenance items to perform during your next check of a transmitter site. These aren't major jobs but tasks that should be done regularly.

Start with checking the mouse traps. Then open up all the circuit-breaker panel doors and ensure that no breakers have tripped. Do you have a generator? Open it to check belts and fluids, especially the coolant level. The battery should be changed every 3 to 5 years. Place a label on the new one to help keep track (particularly

helpful when you manage multiple sites).

Also check the tower base grounding. And look up the tower to spot anything waving in the wind. No loose cables? Then look down as you walk around the site. Any bolts or fittings that have fallen off?

Wrap up your cursory inspection by checking your air conditioners including filters and belts.

What items do you always check during your site visits?













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Congratulations to the winners, featured throughout this issue

adio World announced the recipients of the Radio World "Best of Show" Award at the 2025 NAB Show in Las Vegas. Recipients are chosen by a panel of engineers and editors. Companies

pay a fee to enter. Not all are winners. The awards celebrate companies leading the way in media and technology, as exhibited at the convention. Information about how the program works can be found in an FAQ at

https://future.swoogo.com/nabbestofshow25.



American Amplifier Technologies EmPower

AAT says EmPower redefines how broadcasters and system operators monitor and manage their equipment.

This is a native mobile app that offers real-time insights into system performance, whether users are on site or working remotely. A notable feature of EmPower is a customizable alert system that delivers instant push notifications when irregularities or potential issues are detected, preventing costly downtime and system failures. It tracks critical parameters such as power levels, voltage, VSWR and alarm status from virtually anywhere.

Shown: Matthew Rigdon accepts the award from Paul McLane.

Info www.americanamptech.com

Broadcast Radio Ltd. Broadcast.Radio Archive

Broadcast.Radio Archive is the latest addition to Broadcast Radio's suite of cloud-native tools for radio broadcasters.

Dubbed "BR Archive," this audio and data logging and archiving solution promises flexible logging periods and near real-time access to any point within the archive period. This allows users to check and review broadcast content and re-import content into Myriad or other third-party playout systems for rebroadcasting. In addition to recording station audio output,

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BR Archive logs metadata such as show and presenter names, as well as titles of individual items played from both first-party and compatible third-party playout systems.

Paul presents the award to Peter Jarrett.

Info www.broadcastradio.com/ b-r-archive

DJB Radio Software DJB Zone Wide Area

DJB Zone Wide Area is an "all-in-one" automation solution designed for mid-to-large sized radio groups. It integrates scheduling, live log editing, waveform-based voice tracking and audio editing.

Updated features include automated log ingest and scheduling with email alerts, easy multi-market remote voice tracking with the Wide Area Voice Tracker and an integrated codec and live audio mixer in On Air for remote broadcasts. The Production interface features

a drop-down list of all stations within a radio group for seamless switching between markets.

Adam Robinson and Rob Parsons are with Paul.

Info: www.djbradio. com/djb-zone



14



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*get 2 additional mic channels with the purchase of the ARC-MIC-PRE.





arrakis-systems.com

ENCO aiTrack

With the new aiTrack module, users can preschedule automated voice tracks - such as song intros, stations IDs, localized news and weather - by using generative AI and synthetic voice engines. ENCO says the application is a powerful add-on for its DAD on-air radio automation system and can be used to produce natural-sounding, engaging content between songs. "Its flexibility to create content on the fly and immediately take it to air moves the live radio experience into new territory."

In the booth are Dave Turner, Meg Smith, Samantha Bortz, Ken Frommert and Wes Meisnitzer.

Info: www.enco.com/products/dad





Inovonics INOmini 645 FM SiteStreamer II

The INOmini 645 FM SiteStreamer II is the next generation of SiteStreamer web-enabled receivers for remote signal monitoring.

Inovonics said this new SiteStreamer picks up where its predecessor left off, with a sensitive SDR-based tuner, improved LCD display, high-quality streaming for multiple remote listeners, improved metering for both off-air and Auxiliary reception, more alarm options and two levels of password protection ... just to name a few features. Users can now monitor both off-air Radio and Aux audio levels simultaneously with meters and select which of the 30 presets to include in the StationRotation "round robin" monitoring mode. Shown with Paul are Andrew Cardema, Ben Barber, Earl Sondreal, Josh McAtee, Mukesh Chaudhary, Zach Calden and Gary Luhrman.

Marketron Traffic & **Marketron NXT Integration**



With the Marketron Traffic and Marketron NXT platforms working in tandem, "airtime and digital advertising no longer live in silos," says Marketron.

The bidirectional integration of both platforms has created an end-to-end workflow for proposing, ordering, invoicing and reporting for

linear and digital advertising. The company said stations that adopt both systems can expect to benefit significantly, from lowering operating costs to boosting productivity.

Info? https://linyurl.com/rw-marketron-

MaxxKonnect **RMT416 Radio Multi Tuner**

The MaxxKonnect RMT416, powered by AudioScience technology, allows for up to 16 individual tuners in a 1RU chassis, with separate antenna inputs for AM and FM/NOAA weather.



The tuners are also capable of HD Radio reception.

Each of the tuners has an embedded stream encoder, which allows for streaming audio into broadcast workflows. They also have dedicated balanced analog outputs using the StudioHub+ format. The product has silence and carrier loss detection with alerts delivered via SNMP or email. It can be managed in a web browser via a single-page user-interface.

Shown from left are Heather Jeffcoat, Josh Bohn, Paul McLane, Chris Roth and Mike Hutchens.

Info: www.maxckonnect.com

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The Award-Winning RMT 416

Hear more. Pay less.



Companies everywhere are increasingly occupying smaller physical spaces while also needing to rely more on automated monitoring and alerting. Many publicly traded companies also must navigate compliance issues of proving performance of their radio operations. In an effort to meet those needs MaxxKonnect has partnered with AudioScience® to bring you the RMT416 Streaming Radio Multi Tuner.

The RMT416 is a single rack unit housing its power supply and network connection. There are 4 slots to house the user option tuner cards. Each tuner card features 4 tuners with analog audio for each tuner on a RJ45 connector. When fully populated with 4 tuner cards the RMT416 can host 16 individual tuners in one rack space!

Available tuner cards are:

RMT403 - AM and FM/WB | RMT404 - AM/AM-HD and FM/FM-HD

Web Based Control

Configuration of the RMT416 is all done from its intuative internal web page. The user is free to select which band and frequency for each tuner. The HD tuners allow the user to "lock" the tuner to any available HD channel permitting discrete monitoring of not only HD1 channels but all sub-channels.

Built-in email silence alerting, including activation thresholds and timing, may be set for each individual tuner or not used at all.

Listen Anywhere Using Icecast

The RMT416 can be configured to send audio from any or all of its tuners to a user supplied and configured Icecast Server. In addition to providing live listening for multiple people, there are several readily available programs that can record Icecast. This creates options for off-site logging and listening of air feeds which increasingly is an audit requirement for publicly traded companies.

Monitor It All With SNMP

- Tuner Setting Changes: Band, Frequency, Stereo Lock, HD Channel Acquisition
- Tuner Performance: Received Signal Level, Signal to Noise Ratio
- Audio Performance: Audio Level, Silence Detection, Silence Detection Settings
- Icecast Settings: Icecast Enabled, Mountpoint Settings



Available Now











MusicMaster CS Web

Complementing the "OG" MusicMaster Client-Server (CS), the new MusicMaster CS Web platform takes music scheduling beyond traditional software constraints, allowing programmers full-featured access to collaborate directly from a web browser.

MusicMaster CS Web eliminates the need for complex installations, manual updates and machine-specific licenses, significantly reducing IT overhead. Updates are done on a server level, so all users can have instant access to the latest features without requiring further IT intervention. Users can access their libraries, edit clocks, schedule logs, run analyses and make real-time adjustments all with the same power as the desktop version.

Info: https://musicmaster.com/csweb.php





Nautel & Quu Visual Radio Air Chain

When you combine Quu's content toolset and Nautel's software-based Air Chain, you get an easier and more affordable way to implement visual radio, especially on the car dash.

The Visual Radio Air Chain expands on Nautel's software-based approach for HD Radio by integrating Quu and Rapid functionality into the transmitter, with integrations that tie in studio automation. The companies say the result is a seamless software-based air chain implementation that extends from content playout through visual metadata, audio processing, HD coding and synchronization to achieve Nautel's promise of "Just Add Audio" simplicity.

The Nautel team celebrates, led by President/CEO Kevin Rodgers, rocking a sports jacket over his T-shirt.

Info: www.nautel.com/products/innovations/hd-radio/visual-radio-air-chain/

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NeoGroupe NeoSIP

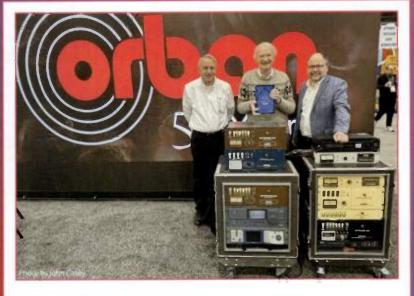
The NeoSIP Phone is a touch-screen interface for communications both in and out of the studio. NeoSIP allows users to replace their existing phone hybrids, guest links and remote journalist codecs with a single system. It uses Windows audio



drivers to interface with any console and ensures call management from guests, reporters and listeners ... talk about any easy way to weed out those questionable callers in advance! All communications come to the same interface and are easily assigned to faders with just a tap of the phone's touchscreen.

Philippe Halin is with Paul.

Info: www.neogroupe.com/en/neosip_en



Orban Labs Optimod 5950 HD

As Orban celebrates 50 years, its Optimod 5950 HD sets its audio processors off toward another half-century of service. This new processor provides analog FM with MX limiting along with HD-1 and HD-2 in a 1 RU package. It offers simple EAS implementation, dual redundant AoIP networks, RDS with PS scrolling, separate management and streaming network interfaces and dual redundant power supplies, all with HTML5 remote network control. Options include Super HiFi HLS+ decoding. All Orban products have a five-year warranty.

Shown with Paul are Mike Pappas and Bob Orban, with a display of legacy Orban gear.

Info: https://www.orban.com/optimod-5950-hd-overview



nextKast onAir Radio Automation Suite

nextKast onAir is an integrated, all-in-one radio automation suite designed to simplify and enhance terrestrial radio broadcasting. It manages music playout, scheduling, traffic logs, Al-driven voice tracking and content automation — all within a single software suite.

Whether a station runs 24/7 automation or operates in live-assist mode, according to the company, nextKast onAir ensures uninterrupted broadcasts with minimal setup time and technical overhead. Its nextAl virtual hosting platform, which includes a library of Al-based voices for use on the air, is built in.

Travis Tibbot of nextKast dealer Broadcasters General Store accepts the award.

Info: www.nextkast.com/onAir/

Radio.Cloud Content Controller

Syndicators can reap the benefits of national content but not lose out on localism.

Content Controller uses Al to allow creators to deliver



customized shows to markets without manual work. Like Radio.Cloud's automation offerings, it is browser-based and it requires no hardware. Modules include the syndicator show overview, which allows hosts to track distribution and affiliate download status. Syndicators have access to an affiliate list for contact management. PDs can insert local imaging or sweepers to rotate into a national show. Content Controller works in tandem with Content Transporter, a Windows service that ensures stations receive correct show files including last-minute changes. Shown are Martin Glashauser, Andrew Scaglione, Shawn Gilbert, Christian Brenner and Jott Lischka.

Info h p://radio.cloud

And the Award Goes to...

The OPTIMOD 5950 HD met with great success at NAB 2025 in Las Vegas, in fact Orban Labs is proud to announce that it received two awards.

of PRODUCT the YEAR 2025 WINNER



"It's always been about music, math, and imagination in the service of broadcast audiences." — Bob Orban

OPTIMOD 5950 HD

FM & DAB+/HD-1/HD-2 Radio Audio Processor



The OPTIMOD 5950 HD is the latest in a long line of award winning OPTIMOD processors.

- Audio processing for FM and DAB+/HD-1/HD-2 Radio broadcasts
- MX peak limiter technology
- High-resolution touch display
- Controllable via any HTML5 web browser
- 1 RU high





Contact BSW Today to Order Your 5950 HD



RCS ZettaCloud

ZettaCloud delivers true "software as a service," RCS says—it's not just Zetta stuck "in the cloud." Users can access the system in a web browser and gain access via single sign-on, which gives your company complete access control. A broadcast studio can connect to ZettaCloud remotely, which allows for offsite broadcasts with a browser and microphone. Audio to the transmitter can be sent via an internet stream or through RCS EdgePlayers, which are small computers 1 RU in size. They allow for redundancy during network outages. More than 360 U.S. stations use ZettaCloud and can manage audio content like voicetracks and station imaging from the cloud and sync them back to stations.

Philippe Generali is with Paul in the RCS booth.

Info: https://rcsworks.com

Telos VX Duo Broadcast VoIP System

It occupies a spot so small "only a couple of stacked CDs" would fill. The VX Duo is a broadcast VoIP system that can be upgraded from its base two-hybrid configuration to eight hybrids per unit. Its mini-PC form factor is suitable for single-studio applications as well as production or news assembly bullpens. The VX Duo software incorporates three-band



adaptive digital dynamic EQ that's been standard in Telos phone systems, as well as a three-band adaptive spectral processor, noise gating, AGC and a wideband acoustic echo canceller. The unit has dual Ethernet ports for VoIP services and Livewire+ AES67 AoIP networking. Robbie Green is shown in the booth.

Info: www.telosalliance.

NAB Show

Super Hi-Fi Control Room

After nearly a century of studio-based delivery, Super Hi-Fi says it's time for radio to meet the moment.

Control Room, accessible through native desktop or mobile applications, is a cloud-based, virtualized platform that allows for live radio broadcasts to be delivered from anywhere



to a station. Talent can participate in a show from multiple locations. It uses Super Hi-Fi's MagicStitch AI to handle segues between songs and other audio elements. Control Room supports Telos Alliance Axia broadcast and virtual consoles to integrate directly with Super Hi-Fi's cloud engine, which allows audio to be routed from a studio directly to the radio station assigned.

Info: www.superhifi.com/products/control-room



Telos Alliance Axia StudioCore Audio Mixing Engine + I/O Gateway

The new integrated console engine for Axia Livewire+ and AES67 AoIP networks allows for physical or virtual mixing. The fanless 2RU device affords multiple channels of audio I/O, an Ethernet switch and a mixing engine for the Axia iQ, Radio, RAQ and DESQ consoles. Clients who prefer touchscreens can pair StudioCore with its Core Soft software for virtual mixing. It has a 24-channel mixing engine, a 32x32 Livewire+ / AES67 routing matrix and a five-port Ethernet switch, suitable for connection with studio peripherals. I/O includes four selectable mic/line inputs, eight line inputs and outputs and three digital inputs and outputs that are configurable as AES/EBU, S/PDIF and USB audio.

With Paul are Scott Stiefel and Luca La Rosa of Telos.

Info: http://telosalliance.com/studiocore

Thimeo Audio Technology RuleBreaker Final Clipper

Sometimes, rules are just meant to be broken — even the rule of not being able to sound both loud and clean. Thimeo's RuleBreaker audio clipper was created by audio processing savant Hans van Zuthpen, whose clipper designs are in products such as the Omnia 9. His concept involves the use of asymmetric composite signals, which provides



the ability to shave off more loudness with less distortion. The result is a $2 \cdot 3$ dB boost, which includes mids, highs and bass with IMD protection. Thimeo says it's all about analyzing, not just clipping, which results in punchy, silky audio for your station.

Hans celebrates the win.

Info https://thimeo.com



Tieline Bridge-IT XTRA II

Stations small and large have an XTRA affordable way to expand their IP network. The IP codec has a front-panel interface with an OLED screen, keypad and menu navigation buttons. It has XLR and I/O connectors that Tieline says make it stand out from comparable offerings. It accepts analog, AES3 or AoIP audio sources and can convert them to audio streams compliant with AES67, ST 2110-30, ST 2022-7, Livewire+ and Ravenna. For STLs, the codec supports failing over to an alternative LAN or cellular connection, or audio files on SD card or an HTTP Icecast or Shoutcast stream. Redundancy is built in, with dual LAN and AoIP ports and dual IEC power supplies.

In the Tieline booth are Glenn Davies, Dawn Shewmaker, Will McLean, Anthony Sizer and Jacob Daniluck with Paul.

Info: https://tieline.com/bridge-it-ii

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Wheatstone Neuron FM/HD Audio Processor

Wheatstone says the Neuron's spectral approach makes it stand out from the crowd. The FM/HD/DAB+ processor uses 1/3-octave band resolution for transient peak control without pulling down critical frequencies. Wheatstone's proprietary algorithms are used for analysis of pre- and post-processed audio as well as data from user control settings to manage spectral balance and program density. The processor also includes reemphasis optimization, multipath mitigation, a Nielsen/Kantar ratings encoder, an RDS/RBDS generator, an SCA and stereo generator and Wheatstone's baseband192 for digitizing the multiplex spectrum. Kelly Parker and Jay Tyler are at the rack.

Info: https://wheatstone.com/

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nautel.com





Wheatstone Wheatstream Duo

Unveiled on the show floor, the sleek Duo is for a content producer who desires a budget-friendly streaming appliance. Suitable for one or two channel applications, it can be added to any analog, digital or AoIP studio, which includes WheatNet IP and AES67-compatible systems. It is accessible through an HTML5 web browser interface and is compatible with standard CDN and streaming platforms. It accepts metadata input from most playback automation systems. The Duo accepts two input streams of analog, AES3, AES67 or native AoIP, each capable of four output streams for a total of eight output streams. Shown from left: Darrin Paley, Kelly Parker, Dave Breithaupt, Rick Bidlack, Phil Owens, John Davis and Jay Tyler.

Info: https://wheatstone.com/product/wheatstream-duo

WorldCast Systems Ecreso FM AiO Series v3.3.2

The company says this is the transmitter that makes SFN accessible to all broadcasters. It uses WorldCast's SynchroStream within its APT IP decoder, which provides realtime dynamic delay compensation to achieve synchronization between multiple transmitters. The transmitter's built-in GPS receiver eliminates the need for external equipment. It includes WorldCast's lossless



audio transport by incorporating E-aptX, APTmpx and SureStream. Its direct-to-frequency digital FM modulator provides a stable RF signal while its advanced measurement interface provides RF, MPX and audio spectrums.

Nicolas Boulay, Chantal Fourgeaud and Gregory Mercier are shown.

Info: https://tinvurl.com/rw-ecreso

Radio Products

Who's Buying What

Family Radio's 93.7 WFRW(FM) in Kingston Springs, Tenn., has updated its transmitter to include HD Radio.

Family Radio acquired the signal from Educational Media Foundation last October, after it was originally sold to EMF by Salem Media.

WFRW serves Nashville and its western suburbs, including Franklin, where the nonprofit Christian radio network's headquarters is

located. That was part of the reason behind updating the Class A signal to HD, according to David Shantz, Family Radio's director of engineering.

Tommy Jenkins, a Family Radio regional engineer based in Pensacola, Fla., handled the transmitter's installation and setup.

The organization purchased a Nautel



VS2.5 transmitter with the VS HD upgrade and the HD Multicast+ Importer/Exporter. WFRW uses an Inovonics JUSTIN 808 for time alignment and sync, as well as an Inovonics 552 HD modulation monitor to measure audio levels. For audio processing, WFRW deploys an Omnia.9 processor.

This is Family Radio's third HD Radio

upgrade after projects in Sacramento, Calif., and Jacksonville, Fla.

San Francisco's 88.5 KQED(FM) is now using **GeoBroadcast Solutions** SFN technology to boost its signal in the East Bay area.

According to a release from GBS, KQED is using four MaxxCasting nodes to improve its signal in Contra Costa County. Three are co-located with SFNs that GBS deployed earlier for Bonneville stations. They are atop Vollmer Peak in Orinda, Rocky Ridge in San Ramon and Wiedemann Hill in San Ramon. KQED is also using a node on Briones Peak in Concord that is not combined with any other transmitters. All four of the licenses were granted as boosters by the FCC in September.

Radio World welcomes submissions from users and suppliers for Who's Buying What. Email radioworld@futurenet.com.

Dear Industry Friends,

I'll get right to it-my costs were out of control.

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If you're feeling the financial squeeze like I was, it's time to talk to DNAV. Call them today for your free consultation and start saving—up to 50% on your monthly costs.

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Writer

Nick Langan The author recently wrote about three pending new U.S.-based shortwave stations.

Engineer eyes new frontier with SDR-powered LPFM

Using open-source tools, Vlad Fomitchev aims to spark engineering interest

he Colorado Society of Wireless and Broadcast Engineering has secured a construction permit for a new LPFM station in Colorado Springs. The 100watt 107.1 FM application withstood an objection from a licensee of an adjacentchannel translator.

The station's stated mission includes the use of an software-defined radiopowered transmitter and exploration of open-source HD Radio. We found this intriguing and reached out to learn more.

Vlad Fomitchev, the society's founder, works in the SDR space at AnySignal and sees opportunities to introduce young people into the broadcast sphere.



As long as Fomitchev can remember, he has had the radio bug.

He grew up in central Pennsylvania. His father Max taught at Penn State and holds doctorates in both computer science and computer engineering.

But Vlad, now 26, didn't inherit his interests directly. "He does participate in a variety of mad science," Fomitchev said, "but it has nothing to do with radio."

One of his dad's colleagues introduced him to amateur radio when he was 10. He still recalls being enchanted by the ham shack. In 2016, he earned his ham license (KX4TH).

That same year, Fomitchev enrolled at Florida Polytechnic University, where he earned a bachelor's degree in electrical and electronics engineering. There, he started the school's amateur radio club, chaired it and affiliated it with IEEE.

The Polk County, Fla., Government's YouTube channel detailed some of Fomitchev's student-led efforts in 2019:

"I got to learn a great deal, and we got a bunch of students their amateur radio licenses," Fomitchev recalled. He credits club president Robert Acacio — now at the FCC Office of Engineering and Technology — as a key influence.

It was also at Florida Poly that Fomitchev began exploring software-defined radios. He stumbled upon a lab where a professor was experimenting with a Wi-Fi-based mesh network using SDRs. "I just happened to walk by the lab one day and thought, this looks sick," he said.

One thing led to another and he joined the project. He dove into GNU Radio — the open-source signal processing toolkit - using hardware from Ettus. He was hooked. SDRs, he realized, had huge untapped potential. "Especially when you start connecting front-end components like filters and amplifiers," he said.

Software-defined transmitting

Most people think of SDRs for receiving. Popular options include the Airspy and models from SDRplay.

But Fomitchev saw opportunity in transmitting.

That led him to explore existing open-source standards, including a GNU-based implementation of HD Radio by Clayton Smith, and an analog stereo transmitter demo built to showcase RDS capabilities.

To Fomitchev's knowledge, no one had combined the two. Using a LimeSDR Mini — about \$77 on AliExpress — he set up a Part 15 station on the Florida Poly campus. "A match made in heaven," he said. For the antenna, he used a dipole that came with his RTL-SDR.

> He leaned into the freeform spirit of campus radio, coding a scheduling interface and updating RDS RadioText.

It also paid off professionally. Fomitchev landed an internship with L3Harris, eventually joining their SDR development team.

Today, he works at AnySignal as an RF and DSP engineer, developing aerospace and defense platforms.

But the idea of a radio station powered by SDR never left him.

Above Vlad Fomitchev



Low-Power FM

"It would be so easy," he said. It's an almost completely unexplored space, he added.

In 2023, he took part in a challenge at the GNU Radio Conference's Capture the Flag event in Arizona, where he generated an NRSC-5 signal with metadata and album art.

That December, he applied for an LPFM license in Colorado Springs under the newly formed Colorado Society of Wireless and Broadcast Engineering, established in part to manage the station.

A space to explore radio transmitting

With other youthful and energetic SDR-savvy colleagues involved, Fomitchev sees plenty of potential. That includes mentoring young people interested in engineering careers.

Programming plans start with more than 4,000 electronica tracks from his personal library, but Fomitchev also wants coverage of local politics, space for local DJs and hourly announcements for community events.

"I'd love to create radio that gets back to its main purpose," he said.

He also plans to collaborate with contacts at the University of Colorado-Colorado Springs to involve students in the station — especially on the engineering side.

For the station's analog SDR transmitter, he's working with the FCC to ensure it meets Part 73 certifications. He's mindful of regulations.

"I have high confidence I can put together something that is compliant," he said, adding that he plans to use a cavity filter to minimize harmonics and out-of-band emissions. He's already been in touch with FCC staff on the implementation.

Eventually, Fomitchev hopes to add experimental HD Radio service to the station.

He expects to be on the air within a few months, pending final decisions like call letters. He's eager to see the local response.

Fomitchev remains active in nearby amateur radio clubs and wants to involve a local deep space exploration society, too. He's been in contact with local broadcast engineers who gave him a tour of the Cheyenne Mountain antenna farm, which he detailed at his website Vlad's Vault at https://fomitchev.net.

His ambitions also include diving into the baseband space between the FM signal and subcarriers — another engineering sandbox.

How it will shape out he's not exactly certain. But given his knowledge and passion, Fomitchev gets the feeling that the LPFM will offer the opportunity for discoveries that could benefit the broadcast community at large.

"There's all kinds of possibilities for engineering projects here," he said.

Radio World welcomes letters to the editor on this or any story. Email radioworld@futurenet.com.



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Radio Regulation

NAB's roadmap for the FCC

Notable proposals from the association's filing in the "Delete, Delete" window

he NAB is urging the FCC to "fundamentally modernize" its regulatory framework. Responding to Chairman Brendan Carr's "Delete Delete Delete" initiative, the association submitted a lengthy filing.

Its headline recommendations: Delete the local TV ownership rules; delete local radio ownership subcaps in all markets; delete rules constraining radio ownership in Nielsen markets outside of the top 75 and unrated markets; delete all restrictions on AM ownership; and in Nielsen Audio markets 1 through 75, change the rules to permit a single entity to own or control up to eight commercial FMs.

But the filing suggested numerous additional changes. Here is a sampling:

Minimize the burden of the online public file and public file requirements — NAB says the rules "require broadcasters to maintain and upload an extraordinary amount of information, or at a minimum, ensure such information has been uploaded."

It said these obligations place heavy burdens on stations, expose stations to frivolous complaints that are costly to resolve, and provide little demonstrable benefit to the public. NAB said that only 0.060 percent of the U.S. population viewed broadcast stations' online public files in 2021. Further, broadcasters face substantial penalties for making simple filing and uploading errors.

Eliminate the expanded foreign sponsorship identification rules — NAB has challenged the rules in court but said the FCC should not wait to act. The expansion of the rules to non-candidate political advertising and paid PSAs was adopted "without proper notice, without evidence, and in violation of the APA and the First Amendment. The diligence requirements also exceed the FCC's statutory authority and impose needless burdens on broadcasters and advertisers."

Eliminate the biennial ownership report requirement

— "These reports do not provide material public benefit, as much of the information about the station owner is tracked elsewhere, such as on the station's license. Indeed, very little information collected in these ownership reports is uniquely important to the public."

Drop requirements that compel broadcasters to announce renewals or transfers of licenses — NAB argues that the rule "imposes yet another compliance burden on broadcasters to air the notification, to place the notification on their stations' website, and to upload certification of the



notification to their stations' public file." It said the public rarely uses these opportunities and that the on-air announcements are more of a nuisance than anything.

Cut back the EEO rule substantially — Keep the part that mandates equal opportunity and forbids discrimination in employment against any person because of race, color, religion, national origin or sex. The rest, NAB said, requires "a plethora of hiring practices and recordkeeping obligations that far exceed what is reasonably needed to fulfill the purpose of the rule." And NAB said FCC has never found a broadcaster to have engaged in unlawful discrimination since the rule was implemented in 2002.

Eliminate the EEO audit process — The audits are a burden, especially for small stations, it argued; and the FCC has conducted EEO audits of at least 20,000 broadcast stations in 20 years but produced fewer than 20 notices of apparent liability admonishments, most of which involved recordkeeping. Also, it is the only rule where the FCC audits stations at random each year. "All other broadcast rules have the expectation that licensees will comply."

Eliminate the Form 395-B filing requirement — The

FCC's decision to reinstate the form and publish the data is under review in a court challenge. NAB said the the costs to stations "dwarf any potential benefits." The public, the FCC and industry have lived without collection of the form "for more than 20 years, without evidence of harm to any stakeholders," and broadcasters "already have every incentive to broadly recruit and ensure equal opportunity in hiring, given the intense competition for qualified employees in today's marketplace."

Radio Regulation

Eliminate the telephone broadcast rule — "However well-meaning in trying to protect the public's privacy rights, the telephone broadcast rule places broadcast journalists at a disadvantage in covering the news. ... It prevents them from catching an impromptu story by recording a telephone conversation with a source. Journalists who operate on non-broadcast media sources are not subject to the same limitation. This asymmetry is only exacerbated by the emergence of new technologies and media sources."

Delete the FM radio duplication rule. Again. — In reviving the rule in 2024, "the FCC relied on bare assertions about harm that could result in the absence of the rule, but neither the FCC nor ... musician advocates could point to any actual harm that had resulted from eliminating the rule four years earlier."

Eliminate minimum efficiency standards that hamper AM stations — NAB said these standards for non-directional stations require large antennas, which

in some sites can be impractical or expensive. "With technological improvements, other AM antenna designs have emerged that are not as large and provide sufficient coverage; unfortunately, these new designs do not meet these minimum efficiency standards." The standards also may create a barrier to entry for AM stations. "In particular, these standards limit stations' ability to acquire and operate from smaller parcels of land closer to a station's audience and may cost less."

NAB said that only 0.060 percent of the U.S. population viewed broadcast stations' online public files in 2021.

Eliminate rules that complicate authorization to access 1605–1705

kHz for new AM stations — Acknowledging that demand for this spectrum is light, NAB said FCC rules require prospective stations to file a petition during a filing period set by the commission. "The FCC has not announced any such filing windows in over 20 years. If the FCC eliminated some of these restrictions, it may open up 'green field' opportunities, as the United States only has 53 stations presently authorized to use this 'expanded band."

EAS participants should have the option to use a software-based ENDEC solution — NAB reiterated its arguments on this proposal, which Radio World has reported on elsewhere.

Fix the rule governing "false EAS alerts"— The NAB said the rule contains vague language and that FCC interpretations over three decades "have made determining what kinds of sounds in content constitute an unlawful simulation an

ambiguous, subjective exercise. ... [S]ometimes broadcasters guess correctly, and sometimes they do not, even after carefully reviewing the content before airing." The false alert rule can inhibit airing of content that may well be permissible, "especially given the FCC's practice of multiplying fines based on the revenues of a violator and whether the same, singular mistake affected multiple stations." It said the FCC should "narrow application of the rule to the transmission of any false or fraudulent signal of distress that triggers an actual EAS alert."

Terminate inquiry into whether all broadcasters should be required to file reports in DIRS and NORS during a disaster — As RW has reported, NAB believes the longstanding, successful voluntary DIRS process is adequate.

Terminate consideration of the proposal to require EAS participants to provide multilingual EAS alerts — NAB said the proposal was under-developed and left open too many questions. "[B]roadcasting alerts in other languages

should remain voluntary and based on a station's familiarity with its local community. Broadcasters are in the business of knowing their audiences and serving their needs, and inserting the FCC into this relationship is unnecessary."

Eliminate the Contest Rule

— "While NAB recognizes the value in ensuring contests are administered fairly, the Contest Rule, in practice, is overbroad and duplicative of Federal Trade Commission and state enforcement activities. ... While seemingly a benign effort at

creating transparency for contests hosted on broadcast TV and radio stations, the Contest Rule has been a hobgoblin of minor contest infractions."

The FCC should formally purge itself of the News Distortion policy — "The FCC's informal news distortion policy provides the commission narrow authority to take action on complaints about the accuracy or bias of news networks, stations, reporters or commentators' in their coverage of events if they meet certain evidentiary standards." NAB called the policy legally dubious, constitutionally problematic and redundant in today's media ecosystem.

Close pending proceeding mandating disclosures of the use of artificial intelligence in political ads — NAB wrote, "The FCC should CLOSE this proceeding without taking any further action and hopefully forget this was even a thing."

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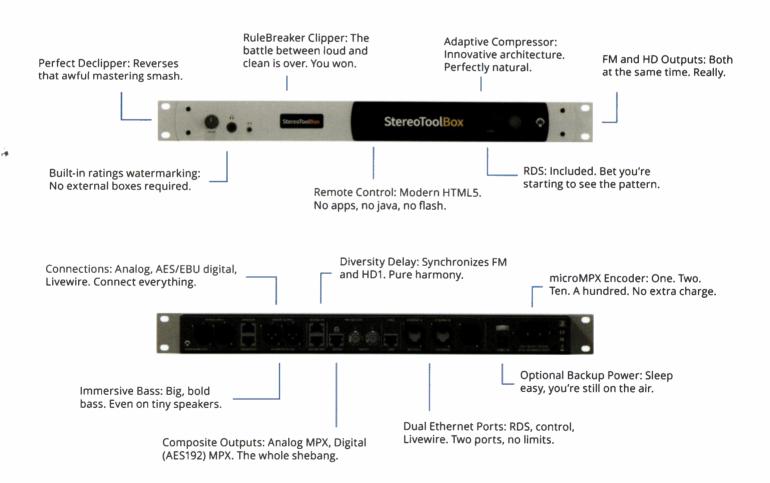
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