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FUTURE US, INC.

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



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Radio World (ISSN: 0274-8541) is published bi-weekly with additional issues in February, April, June, August, October and December by Future US, Inc., 130 West 42nd Street, 7th Floor, New York, NY 10036. Phone: (703) 852-4600, Fax: (703) 852-4583. Periodicals postage rates are paid at New York, NY and additional mailing offices. POSTMASTER: Send address changes to Radio World, P.O. Box 1051, Lowell, MA 01853.

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

Chief executive Zillah Byng-Thorne
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Of calendars and slow mail



Paul McLane
Editor in chief

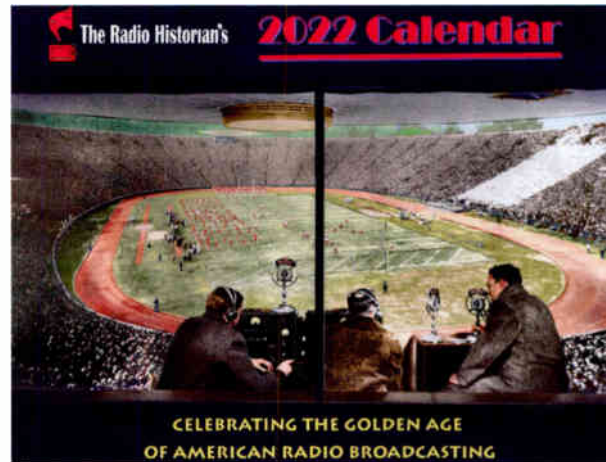
Print readers, have your copies of Radio World been a little, shall we say, slow in arriving?

Mine too. In fact my Sept. 15 issue landed in my mailbox two months late.

Delays in postal delivery are affecting many publications. (Sometimes we at RW do run a little behind in getting an issue out, it's true. But when an issue arrives a month or two after its cover date, that's a Post Office problem.)

We apologize for any inconvenience and hope for improvement soon.

On lighter matters, the 2022 edition of the Radio Historian's calendar is out. It is published by John Schneider, whose articles about radio history have appeared in our pages. Radio World has no involvement with the calendar, I just think it's nifty, with its 13 beautiful colorized photographs.



The cover features Graham MacNamee and George Hicks broadcasting a Stanford football game over NBC in 1934. Inside pix include the studio of Westinghouse station KYW in the Congress Hotel in Chicago (yes, Chicago) in 1926; the sound effects storage room at NBC's Radio City building in San Francisco about 1942; the live broadcast of an all-woman production of "Now is the Time," heard over the NBC network in 1944; and disc jockey and actor Bob Crane doing his morning program over KNX in Los Angeles in the mid-1960s.

It costs \$21 including postage to anywhere in the United States. Find it at <http://theradiohistorian.org/pubs.html>. Tell John I sent ya. 📻

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U.K. Review: AM Should Go, FM Stay Until 2030

The government of the United Kingdom should start planning to shut down AM (medium-wave) radio, but analog FM services should stay on the air until at least 2030.

These were among recommendations in a Digital Radio and Audio Review commissioned by the government.

"AM — which according to estimates calculated for the Review now accounts for just 3% of all radio listening — has reached the point where the BBC, commercial radio and Ofcom need to prepare for the retirement of national services," the authors wrote.

"However, traditional radio, including FM services, is valued by many listeners — particularly those who are older or vulnerable, drive older cars or live in areas with limited DAB or broadband coverage. On current trends, therefore, the Review's conclusion is that FM will be needed until at least 2030."

That said, research conducted for the Review by advisory firm Mediatique estimates that analog radio "will account for just 12-14% of all radio listening by 2030." As a result, the report's suggested reprieve for FM is time-limited: "The U.K. radio industry should begin preparing the ground for a possible switch-off of analog services at some point after 2030."

— James Careless



Getty Images/SOPA Images

Remembering the Career of Rick Edwards

Richard L. Edwards, whose career included an engineering leadership role at Guy Gannett Broadcasting and frequency coordination work for the Society of Broadcast Engineers, died in October.



He passed away at a hospice facility in Woodstock, Ga., at age 74, according to an obituary provided by his son Jonathan Edwards, P.E.

He joined Guy Gannett in 1979 and worked there for 15 years, rising to become director of engineering and vice president. The accompanying photo dates from that era.

Among other accomplishments, he secured an STA from the FCC to increase power on Miami station WINZ(AM) to fight severe nighttime interference from a station in Cuba that exceeded treaty limits.

He worked later as an NFL game day coordinator and SBE national frequency coordinator and vice president. In 1995, he assisted the NFL in coordinating Super Bowl XXIX in Miami, and went on to lead coordination efforts for numerous Super Bowls.

Read about his broadcast accomplishments in the full obituary at radioworld.com, search "Rick Edwards."

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Imlay to retire as SBE general counsel

Longtime communications attorney is known for his spectrum expertise



Courtesy SBE

Writer Randy J. Stine

Radio World's longtime news contributor interviewed Dave Hershberger in the Oct. 27 issue.

Chris Imlay credits an abiding love of ham radio as one of the reasons he has devoted his career to communications law.

Imlay, 68, is retiring as general counsel for the Society of Broadcast Engineers; the search for his successor was underway in November. His tenure in that role began in 1991, but his actual work for the group goes back to 1980 when he

took up SBE's appeal of the FCC decision to eliminate the First Class Radiophone License.

Announcing Imlay's retirement, SBE President Wayne M. Pecena said, "Chris Imlay has been a valuable resource for and asset to the SBE over the past 41 years. He has also been a staunch advocate for the SBE's goals and objectives. He is a tough act to follow."

Imlay specializes in federal communications law but has represented licensees and associations of communications users, especially technical and electronic communications associations, electronic equipment manufacturers, colleges and universities, in addition to his

work on FCC regulatory issues for SBE.

"I still plan to work with a handful of my mom-and-pop broadcasters as clients past the end of the year. I want to make sure they are settled and taken care of as I begin to wind down my practice," he said. "But I have to give this up at some point and there are other things I want to do."

Imlay began his legal career in 1975 after graduating from American University's Washington College of Law. He began practicing communications law in 1979 when he joined the firm Booth and Freret.

It was there that his long relationship with the SBE began. Soon Imlay found himself attending society board meetings and NAB Shows, and providing reports about pending FCC regulatory issues.

Imlay was retained as SBE communications counsel in 1984. In 1991, SBE President Rick Farquhar arranged for the board to confer Imlay with the general counsel title.

Advocacy role

Reflecting on his career, Imlay said, "I have valued my work with the SBE, as it has allowed me to do what I do best: defending spectrum allocations of clients and participating in technical regulatory proceedings. I have always been

Above
Chris Imlay is shown speaking at the NAB Show in 2014.

most comfortable working with broadcast engineers.”

The SBE chief counsel was elected a Fellow of the SBE in 1997, which he still considers the most important honor received throughout his professional career.

Imlay, who has worked with 22 SBE presidents, describes himself as a “down in the trenches” communication lawyer, focused on advocacy and education.

“I grew along with the advocacy program at SBE. It’s been interesting how that happened. I fell in with a very technically inclined communications law firm, and that was a stroke of luck. The very first thing I worked on for SBE and then-President Bob Jones was the appeal of the FCC decision to eliminate the First Class Radiophone License, which interestingly was very much against SBE’s best interest.

“SBE thought the license signified something and should be preserved. SBE lost, but the appeal did serve as the first step into the waters of advocacy, something at the time the SBE board hadn’t really considered.”

This would signal a major turn in philosophy for SBE and a growing role for Imlay within the organization.

“Spectrum management issues were beginning to become a thing, and SBE thankfully believed this was an important topic for its membership. I never tried to push them in that direction, but gradually we undertook more and more advocacy projects,” Imlay said.

Imlay credits another past president, Richard Rudman, with a leadership role in developing SBE’s more proactive approach.

“He had some important observations about how broadcast engineers needed access to decision-makers and how the broadcast auxiliary spectrum needed protection from encroachment from incompatible sharing partners or being reallocated. This was great foresight, considering what we see currently from the FCC in regards to spectrum management.”

Informing regulators

An early goal for Imlay was making sure people who worked at the FCC understood what broadcast engineers did in the way of program production and ENG.

Under Rudman’s guidance SBE turned the corner in how it approached advocating in FCC dockets dealing with spectrum. But Imlay said Rudman also realized the need to educate FCC staff.

“SBE had never taken an active role in broadcast auxiliary spectrum protection but more a reactive role; we became more active in that. We decided we needed to do more



Above
Imlay, right, is a devoted bagpiper. “I just love the instrument and the emotive sound of it.”

than just make comments in rules proceedings.

“So we organized half-day long presentations to the FCC staff. It was very well received by FCC engineering staff and even non-technical staff. We quickly learned this was a good thing, creating comprehensive awareness of what broadcast engineers do and why spectrum is important to them.”

So began Imlay’s longtime focus on “educational advocacy” and his efforts to ensure that the FCC and those in Congress were aware of nuances of the work of broadcast engineers and how they utilize Broadcast Auxiliary Services.

“Today everything I do is generally focused on spectrum issues, everything from advocating for more UHF wireless mic spectrum, following the 600 MHz

auction, to making sure that 2 GHz especially, but also 6.5 GHz and 7 GHz are continually available and not usurped by incompatible services,” he said.

“SBE is focused on making sure the scientific integrity of those spectrum compatibility determinations are made as a prerequisite for a spectrum sharing proposal. And that it shouldn’t only be an economic analysis judgment of the FCC.”

In fact, Imlay said a section of the Communications Act focuses on the economic success of spectrum auctions, which forces the FCC to accept proposals based on their potential economic success.

“It’s the policy of the United States to encourage the provision of new technologies and services to the public; so anybody who opposes a new technology, that is proposed to be permitted under the act, has the burden to demonstrate that the proposed service is inconsistent with the public interest,” he said.

“So without assessing anything about the technical integrity of a new proposed service, the U.S. policy is for the FCC to support that service. By definition that puts incumbent services — like broadcast radio and TV, which are considered older technology — at the back of the bus.”

Imlay is known for his work helping amateur and broadcast engineering associations prepare materials in FCC rule making and adjudicatory proceedings.

He said he believes the FCC does a “poor job” of ascertaining spectrum compatibility before making rulemaking decisions. He nevertheless characterizes the technical competency of the FCC as “exceptional and consistently high,” especially in the Office of Engineering and Technology and in the Media Bureau.

“Audio Division engineers are top-notch, to a person,

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and they are accessible and helpful. That said, they are not always consulted by the bureau front offices when technical decision-making occurs. But they should be," Imlay said.

Defining an "engineer"

The attorney recalls some "wins and losses" through the years. One important victory was preventing states from implementing statutes that required broadcast engineers to register with the state and obtain a PE certificate.

"The effect of these statutes, which were intended to protect the public, was that broadcast engineers couldn't call themselves engineers. Our position was and still is that broadcast engineering is a different animal than civil

or mechanical engineering. Broadcast engineers work in facilities solely under the jurisdiction of the FCC and states have no jurisdiction to regulate the practice of broadcast engineering," Imlay said.

"These statutes were clearly not in the interest of broadcast engineers. We had some good decisions in Texas and Oregon; and we don't seem to have those issues today."

SBE did end up losing a battle to prevent numerous FCC field offices from closing in 2017.

"We took the issue to Energy and Commerce Committee members in the House and to Commerce Committee members in the Senate. The aggregate loss of engineering talent when the field offices closed, and the loss of rapport and positive working relationships with broadcast engineers caused by the forced retirement of experienced FCC field engineers was a nightmare. We have visited with House members in an effort to restore some of that talent, and continue to do so," Imlay said.

There are issues on which SBE continues to seek action, including background noise on the spectrum. The society believes the commission lacks a good basis for determining levels of ambient, manmade RF noise in various allocations.

"The FCC relies heavily now on spectrum overlays and the interference temperature of receivers, and it uses those concepts in determining what radio services can

“ I fell in with a very technically inclined communications law firm, and that was a stroke of luck. ”

8

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Photo credit: Brian Olliger, WTOP

Above
Imlay speaks to SBE Chapter 37 in 2015 at the Radio One facility in Silver Spring, Md., on the topic of "Rules, Regs, and the Broadcast Engineer."

be combined in the same bands. That presupposes that the FCC knows how much noise there is in various RF environments," he said.

"SBE's frequency coordinators know their markets very well and they know what works and what doesn't, but the FCC doesn't have any idea what those levels are," he said.

Imlay points to SBE's certification program as the "flagship" of SBE educational services.

"Without exception, I have found SBE presidents, folks like Chriss Scherer and Richard Rudman and really all of them, to be team-spirited folks not interested in self-promotion at all."

The SBE has 5,000 members and 114 chapters across the United States, its territories and a couple of other countries. It will split Imlay's responsibilities, planning to retain an Indianapolis attorney for association business matters.

"I believe they have already found an Indianapolis law firm to help with corporate and tax type issues, which isn't something I really did anyway. The important part of finding a successor to me is finding somebody who is skilled in spectrum allocations and spectrum management issues," Imlay said.

Imlay, described as a spectrum expert by many in the industry, says he spent countless hours of his career writing comments on behalf of SBE for FCC spectrum dockets, but he says the work would have been for naught without the expertise of practicing broadcast engineers.

"As technically oriented as my law firm is,

that," he said.

"I'm also a dedicated bagpiper. I go to all the Highland games in the area. I compete in solo and band competitions. In fact, I have studied with some of the old masters in Scotland. I just love the instrument and the emotive sound of it," he said.

Imlay has all kinds of interests to pursue in semi-retirement. "I haven't been up any of my three ham radio towers in way too long. I have rotators that don't work. I have coax and antennas to replace. And I need several new transceivers, so I want to stop and smell the RF for a change," he said with a chuckle.

I'm not a broadcast engineer. I have to rely on fact-gathering of SBE board members, the SBE Government Relations Committee and leaders of our frequency coordination program. All FCC responses are very collaborative efforts," Imlay said.

Imlay resides with Rita, his wife of 41 years, in Cloverly, Md. The couple has two children, Bonnie and Ashton, and two grandchildren, Simone and Langston. ("So far, only one of the family is an engineer," Imlay said.)

Since 2014, Imlay has been managing member at what is now called Booth, Freret & Imlay LLC. He said he hopes to find a balance in order to work two or three days a week and have more time to fish and play his favorite musical instrument.

"I have 24 acres in western Maryland that I manage and do forestry on the weekends. I just haven't had the time to enjoy

“ Our position was and still is that broadcast engineering is a different animal than civil or mechanical engineering. ”

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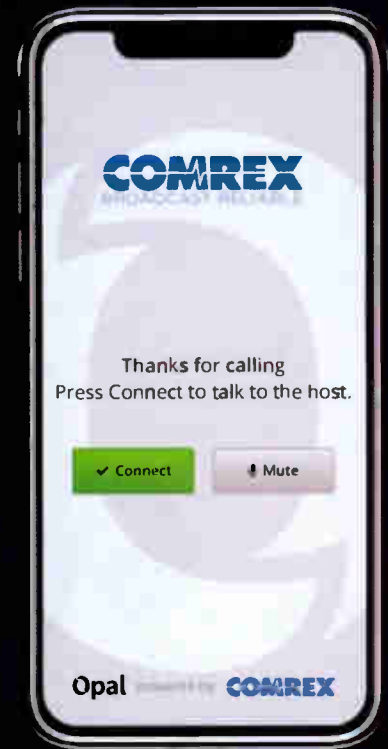
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World Radio History



John Bisset

CPBE

The author has more than 50 years of broadcast experience and is in his 31st year at the Radio World Workbench. He handles western U.S. radio sales for the Telos Alliance and is a past recipient of the SBE's Educator of the Year Award.



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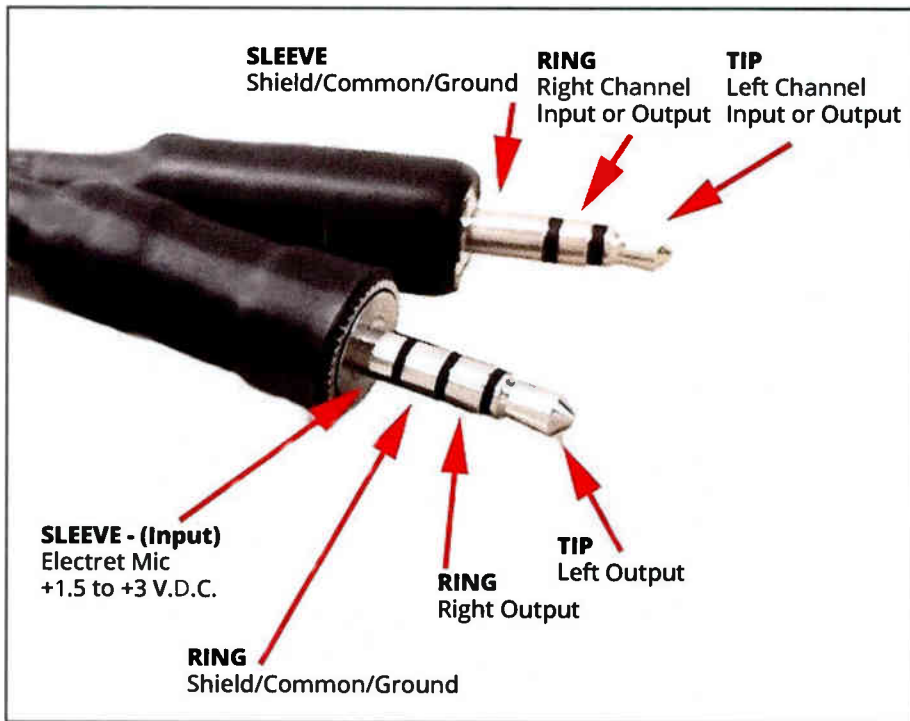
Consultant Frank Hertel of Newman-Kees RF Measurement needed to create a special audio interface recently.

He said he was not aware of a protocol for wiring Tip-Ring-Ring-Sleeve connectors, which are prevalent on laptop computers with only one audio jack.

The first image shows the difference between the typical Tip-Ring-Sleeve, with which most readers are familiar, and Tip-Ring-Ring-Sleeve connectors.

What surprised Frank was that the positive voltage for powering the electret mic is on the Sleeve of the Tip-Ring-Sleeve-Sleeve connector, and the Shield/Common/Ground connection for the electret mic and left and right outputs for the headphones are on one of the Ring connections, the one closest to the Sleeve (which, remember, is the positive voltage for powering the electret mic).

Therefore, if you want to connect any audio source other than the electret mic, you will need to add a DC blocking capacitor between the Sleeve and the hot phase wire of



your external audio source (since that source does not require a DC voltage).

The hot signal wire from that source connects to the Sleeve of the Tip-Ring-Ring-Sleeve connector, through the blocking capacitor.

Frank said with a laugh that the protocol seems so foreign to the common one we used for years, in which the Sleeve is the connection for the Shield/Common/Ground. He suspects someone had a hangover when they decided to come up with this one.

He adds this note: When connecting an external audio source via the DC blocking capacitor, you may need to attach a resistor between the Sleeve (input) and the Ring (Shield/Common/Ground). If some current doesn't flow between these connections, the computer's input may not be activated. If you find that a resistor is required, a 2.2 K-ohm should do the job.

Computers vary. The best approach may be to add a 10 MFD DC blocking capacitor in series with the high lead of the external audio device, as well as the 2.2 K-ohm resistor connected across the Sleeve and the Ring terminals.

What is your experience? Email your thoughts to johnpbisset@gmail.com.

“ Dan Slentz enjoys sharing clever, inexpensive ways of doing things. ”

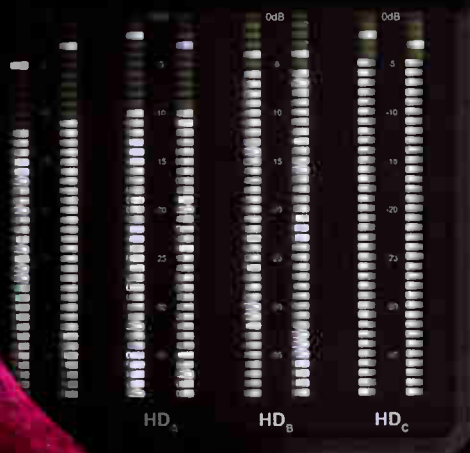
Above A comparison of Tip-Ring-Sleeve and Tip-Ring-Ring-Sleeve plugs.

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Stop the sound of silence

Contract and projects engineer Dan Slentz enjoys sharing clever, inexpensive ways of doing things.

He told us about a freeware silence sensor from Pira.cz (<https://pira.cz/show.asp?art=silence>). The software monitors the presence of an audio signal on a stereo program line or PC sound card. When no signal is present for a specified time, pre-defined solutions activate.

This is useful for monitoring an STL feed or hard-drive playback system where continuous audio is required. If the audio drops below your chosen threshold, the Pira.cz Silence Detector will switch to a backup and notify you with an email alert.

Next, with COVID easing, you may see guests returning to your studios. If so, you know the importance of a “cough switch” on each microphone.

Dan found a compact, reasonably priced aluminum box that permits the user to toggle the mic on and off, so the box has dual usage — for the “Voice of God” in a stage manager’s TV studio setting, or a momentary mute cough

switch for individual mics in an interview studio. Built for the pro audio industry, it is from AudioMan Products. At audiomanproducts.com, scroll down to “Push to Talk Ver. 2.”

Dan says the muting of the mic is quiet — no pops or clicks when the mute button is depressed. Plus, construction is solid, and it’s built with Neutrik XLR connectors.

The AudioMan Push to Talk Ver. 2 will work with dynamic or phantom-powered condenser microphones wired with balanced three-pin connectors. I’ve saved the best part for last: Push to Talk Ver. 2 is just \$59, and quantity discounts are available.

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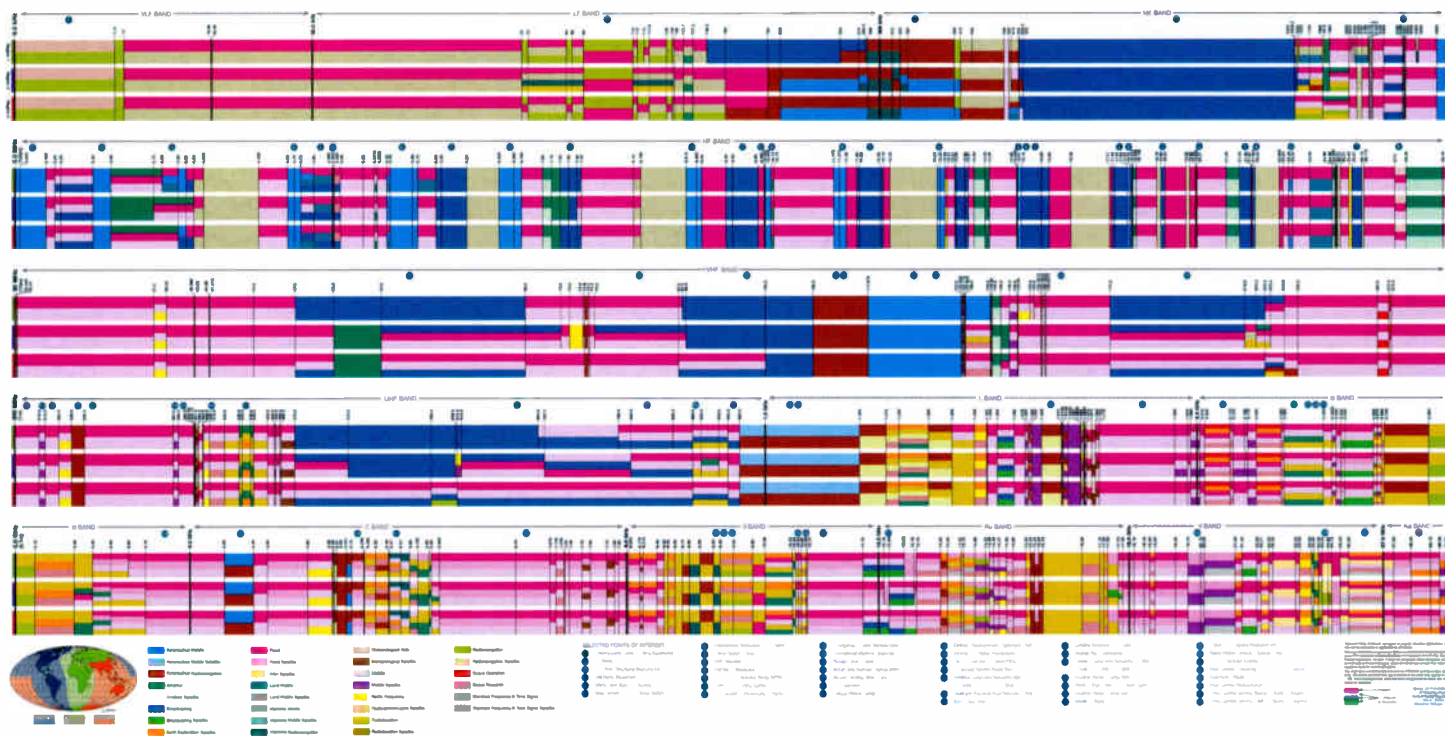
What’s the frequency, Workbench?

Finally, Tektronix is offering a free download of its colorful Worldwide Spectrum Allocations poster. Find it at <https://tinyurl.com/rw-tektronix> or visit tek.com and search “spectrum poster.” We thank Brad Odhner of Tektronix for sharing this resource with Workbench readers. 🌐

Below
You can download
this Tektronix
Frequency
Allocations Chart.

Worldwide Spectrum Allocations

(Courtesy of Tektronix)



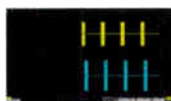
TEKTRONIX REAL-TIME SPECTRUM ANALYSIS SOLUTIONS

Solving your RF challenges from the bench to the field

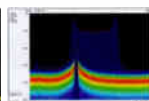


TEK.COM/SPECTRUM_ANALYZER

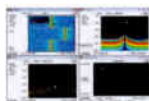
Discover more



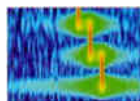
Gain deeper insight



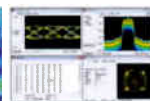
Trigger on frequency changes



Capture seamlessly into memory



Analyze multiple domains



COMMON WORLDWIDE WIRELESS TECHNOLOGIES

| Technology | Frequency Range | Bandwidth | Modulation | Power |
|---------------|---------------------|-------------------|------------|-------|
| 4G LTE | 700 MHz - 2.6 GHz | 10 MHz - 100 MHz | OFDM | 20W |
| 5G NR | 470 MHz - 7.125 GHz | 100 MHz - 400 MHz | OFDM | 4W |
| Wi-Fi 6E | 5.9 GHz - 7.1 GHz | 160 MHz | OFDM | 1W |
| Bluetooth LE | 2.4 GHz - 2.48 GHz | 1 MHz | GFSK | 10mW |
| NB-IoT | 800 MHz - 900 MHz | 180 kHz | OFDM | 20mW |
| LoRa | 863 MHz - 923 MHz | 125 kHz | FSK | 1W |
| ISM | 2.4 GHz - 2.48 GHz | 10 MHz | FSK | 1W |
| CBRS | 3.7 GHz - 3.98 GHz | 10 MHz | OFDM | 100W |
| Public Safety | 700 MHz - 800 MHz | 10 MHz | OFDM | 100W |
| Maritime | 1.6 GHz - 1.875 GHz | 10 MHz | OFDM | 100W |
| Aviation | 118 MHz - 137 MHz | 12.5 kHz | FM | 100W |
| Space | 1.6 GHz - 30 GHz | 10 MHz - 100 MHz | QPSK | 100W |

Tektronix

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Exhibit Sampler

These are some of the exhibitors of interest to RW readers; see the show website for a complete list.

Zwcom Systems
 AEQ
 AETA Audio Systems
 Aldena
 Amazon Web Services
 Audio-Technica Ltd.
 BW Broadcast Ltd.
 Calrec Audio
 Comrex Corp.
 Dalet
 Delta Meccanica
 DPA Microphones
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 ENCO Systems
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 Lawo
 MusicMaster
 NAB Show
 Narda Safety
 Nautel
 Netia
 Neutrik Group
 Orban Europe
 Prodyz
 Rohde & Schwarz
 Sennheiser
 Shure Distribution
 Sonifex Ltd.
 TASCAM/TEAC
 Tieline
 Winmedia
 WorldCast
 Systems
 Xperi
 Yellowtec



IBC2021 typifies the challenges of show planners

Event was a “go” at press time in face of tightening government protocols

IBC said in early November that its December convention in Amsterdam was a “go” and that attendees would not be required to wear masks once they’re inside the show perimeter. Then news broke that the Dutch government was putting tighter pandemic protocols in place in the face of a resurgent COVID-19.

Convention organizers met with their partnership board and decided to press ahead as of Nov. 16, citing “determined industry support.” They adjusted show hours to help accommodate industry meetings.

Given the history of major global trade shows over the past year and a half, it’s possible the situation will have changed again by the time you read this; check the show website for the latest status.

The broadcasting community has been watching with interest to see if IBC could take place in person and how many people and exhibitors would take part. It is one of three major in-person conventions relevant to the world of broadcasting on the calendar in the next five months, along with CES and the NAB Show.

NAB ended up cancelling its 2021 event, which had been pushed back from spring to the fall earlier.

As of press time the CES show in January in Las Vegas is on.

At IBC, show organizers had posted travel and safety guidance for attendees based on departing country, including those considered at high risk like the United

States and United Kingdom. Find those at <https://show.ibc.org/useful-info/your-safety-covid-19>.

If the convention happens, its content program will be free to access for the first time. The content plan is built around five themes: Production & Post Production, Content Supply Chain, OTT, Direct to Consumer (Content Everywhere), Live & Remote Production and Innovation.

Scheduled keynoters include James Gibbons of Discovery Inc., Mike Davies, of Fox Sports, Johannes Larcher of HBO Max, Vincent Tauzia of Netflix, Yiannis Exarchos of Olympic Broadcasting Services, Superna Kalle of Starz, Mike Wuetherick of Unity Technologies and Bob Hesskamp of WarnerMedia.

Convention keynotes will be held at a more central location than in the past, in the Showcase Theatre in Hall 12.

The convention is scheduled for Dec. 3–6.

IBC also has a digital iteration of the event that is active online into next March. As an example of how the online platform is being used, this year’s IBC Innovation Awards were set to take place only on IBC Digital in November, though the winners will be invited to attend a networking reception at the live event in Amsterdam. The recipient of the IBC2021 International Honor for Excellence is Barbara Slater, BBC Director of Sport, the first woman to hold that post and described as a pioneer for women in sports broadcasting worldwide.

For information, go to show.ibc.org.

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World Radio History

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About Buyer's Guide

We publish User Report testimonials for various equipment categories throughout the year to help potential buyers understand why colleagues chose the equipment they did. Do you have a story to tell? Write to brett.moss@futurenet.com.

Vox Media uses Tieline Report-IT for interviews

Ease of use makes producers and remote guest users happy

Writer Miles Ewell

Director of Production Technology
Vox Media

Vox Media is a leading independent media company, and the Vox Media Podcast Network is one of the largest collections of popular podcasts spanning technology, news, pop culture, futurism, current trends and more.

Our portfolio features the most relevant and respected editorial properties including Vox, New York Magazine, The Verge, The Cut, Eater, Vulture, The Strategist, Polygon, SB Nation, Intelligencer, Curbed, Grub Street and Recode.

Tieline's Report-IT Enterprise app is an important tool within our technology offerings and it helps us tell stories that affect our audience's daily lives and entertain as much as they inform. Podcast producers and hosts primarily use Report-IT to interview remotely located guests outside of the company, because the app facilitates high-quality recordings and simple file uploads.

How It Works

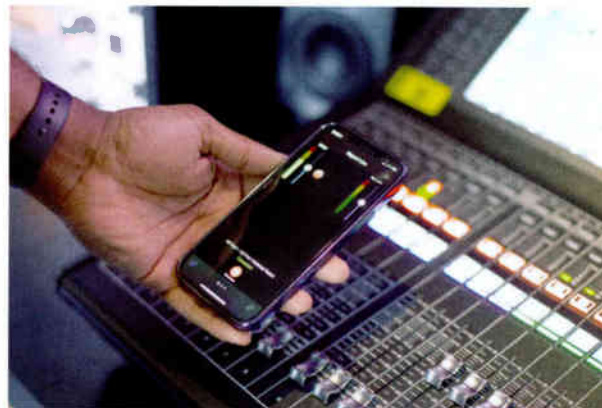
The Report-IT Enterprise app is a free Android or iOS download for guests. They download the app and then we send them a URL link created by Tieline's TieServer Console.

When the prospective user clicks the link it launches the app and automatically authenticates and logs each guest in. The guest then just taps "Connect" to dial a secure Tieline codec (Gateway, Merlin, Merlin Plus, Bridge-IT) at one of our studios. When they connect they can communicate in real time with hosts at our studios in New York, Washington, San Francisco or elsewhere.

Sometimes guests have accessories they plug in to improve listening and sound quality during the interview, but often they just use the phone itself, which usually provides pretty good quality these days.

High-fidelity audio is automatically recorded as a file on a guest's device as they chat directly to Vox Media's producers and hosts. At the conclusion of their interview it is securely uploaded directly to a server over Wi-Fi or cellular for ingest and editing as required.

In my experience, achieving high sound quality and simple file delivery are our biggest challenges. Uploading or sending files can be a huge challenge with nontechnical guests. Report-IT helps us deliver the best possible recording quality from our guests with simple file delivery to our servers. This is a great option for Vox Media Podcast




Network producers.

We also use Tieline's Cloud Codec Controller software, which provides remote control over critical Report-IT functions like input gain, as well as record functions on the app. This makes it easy to adjust settings remotely if a nontechnical person is on the other end.

Ease of Use

We use Report-IT multiple times each week and ease of use is everything with our external podcast guests. The simplicity of configuration regarding file uploads and connection points is crucial to the workflow. The app's user interface is simple. Plus, it's easy to connect, record and then seamlessly upload a recorded file.

Producers appreciate the reliable file delivery and quality of recordings. I particularly like the user interface and how you can have different user accounts configured for specific Tieline codecs and server folders etc. It's very flexible for automation.

Achieving high-quality sound and reliable and timely file delivery of recorded interviews are our biggest challenges. Report-IT delivers superb features and a robust solution at a great price. 

Right
Tieline Report-IT in
use at Vox Media.



More info

Contact
Doug Ferber
at Tieline at
1-888-211-
6989. For
international
queries contact
Charlie Gawley
in Australia
at 61-8-9413-
2000 or visit
www.tieline.com.

An advertisement for Nautel NX Series power amplifiers. It features two large, blue and silver rack-mounted units. The text on the left side of the ad reads: "NX Series", "3 kW - 50 kW AM", "Radio", "Outstanding Control", "86-88% Efficiency", "Compact", and "nautel.com/NX nautel".

Writer
Shannon
Burke
"The Shannon
Burke Show"

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RadioPix captures "The Shannon Burke Show" in one simple package



More info
Contact Patrick
Murphy at
BroadcastPix at
1-978-600-1100
or visit [www.
broadcastpix.
com](http://www.broadcastpix.com).

When I started doing radio back in 1994, a camera in the studio was unheard of, but

now it's pretty much mandatory to have a streaming component to your show. It helps get your listeners more engaged in what you're talking about and it helps you do more things.

For instance we have a watchmaker who is a sponsor. We can have him in to demonstrate his collection of watches to the listeners.

Towards the end of last year we found ourselves looking for an efficient streaming camera system. A lot of stations around here have employed someone to switch their cameras manually, and that didn't seem like a very good move to us.



That was part of what led us to a BroadcastPix system. RadioPix is microphone-activated and the cameras just follow whoever is talking.

Once we had the system settled in with our Wheatstone

Continued on 22

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Modulation Index StreamS works well at Pattison Media

Encoder provides tools and performance to maximize streaming for Canadian broadcaster

At Pattison Media, we operate 48 radio stations across western Canada. Streaming is important to our group

Our programming team actively listens to our streams and promotes the use of smart speakers and mobile apps to our listeners. Our technical teams treat streaming with the same degree of importance as we do with our broadcast signals — if there is a problem, it requires urgent attention. This attention to detail has led to significant growth in our streaming come and average time spent listening.

For the last 12 months, our radio stations have been using the Modulation Index StreamS encoder to encode our online streams.

We selected the StreamS encoder because of its support for modern audio codecs (HE-AACv2 and xHEAAC), native HTTP Live Streaming support, and metadata injection directly into ID3 tags.

The combination of these features makes it possible to address timing imprecisions that can often plague digital ad insertion. Encoding directly

Writer



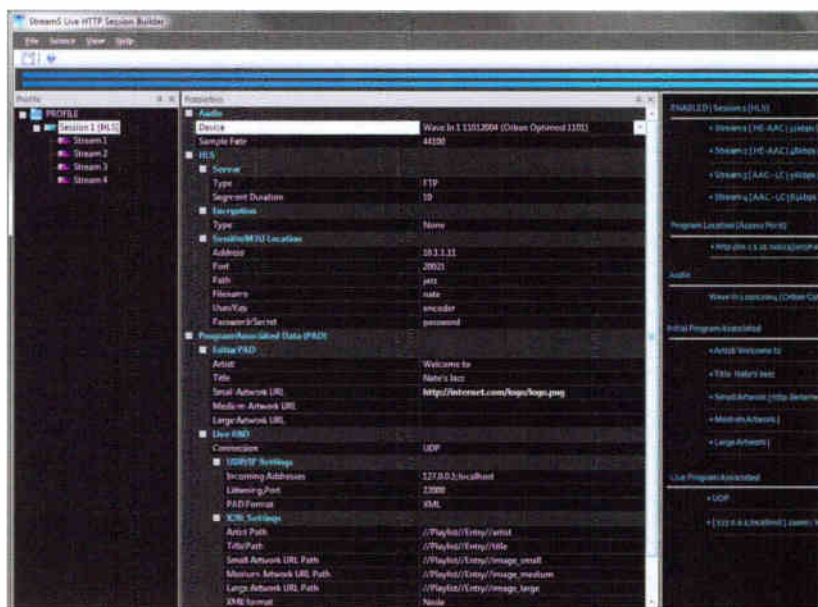
Andrew Snook
Director of Digital
Pattison Media



More info

Contact John Schaab at StreamIndex at 1-940-206-7702 or www.streamingindex.com.

Above StreamS screenshot



into HLS rather than converting to the format at the server-side has helped us align timing markers by being able to listen to HLS segments as they come out of the encoder and measure metadata offsets to the millisecond level.

The injection of metadata into ID3 tags allows a consistent granularity of 42 milliseconds, which is a big improvement over traditional ICY metadata that can have significant

variations in timing.

We have used the StreamS encoder in markets of all sizes, with some running just a single stream and others running up to six separate streams simultaneously. The configuration within StreamS allows for different settings on different streams and gives technicians the ability to customize encoding values for each stream.

We have also been happy to see the product continue to evolve with support for new codecs such as FLAC and new formats such as fragmented MP4. This evolution is important, as we continue to strive to deliver the best listening experience possible.

We're happy with the StreamS product. Modulation Index helped support a fast rollout across our group and has been responsive to all of our questions. The encoder has been running reliably and continues to deliver quality audio to our listeners each and every day.

Continued from 21

board it's been fantastic. We haven't had any issues.

The monitor that it runs off sits back in my engineer's area; he turns it on at the beginning of the show and we're off to the races. It just works.

On the rare occasions when we've had to call somebody about it, mostly when we were getting up and running, the BroadcastPix folks were attentive.

We have two moving cameras installed at the moment in high-up positions. We've got a small

table with four positions, and the boom mics would be in the way if they were stationary on the table. But saying that, we're looking at getting a third camera and we're toying with a tabletop unit for the center of the table so we can get a closeup of myself or the guests.

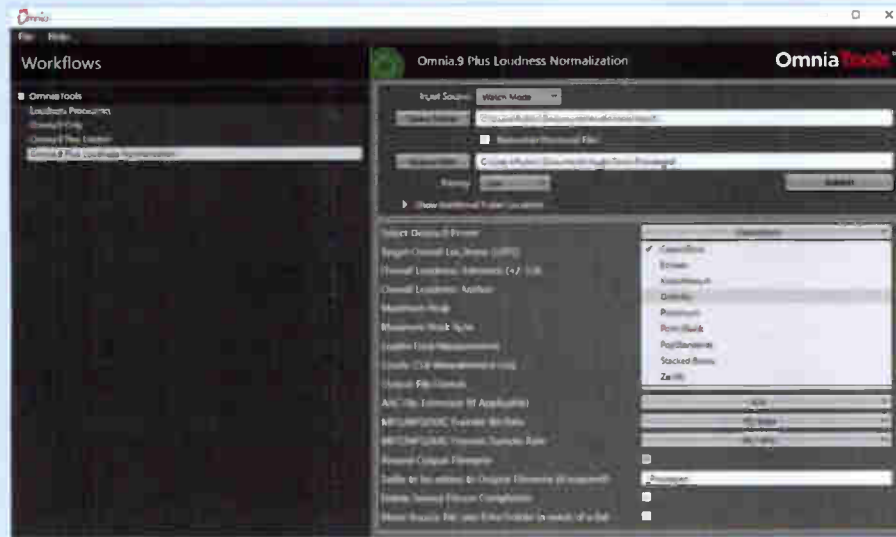
I've not used any other modern systems, but when looking at other people's shows, a lot of the time the picture is terrible. The quality is just not there. Our pictures are great, and it's all from a system that we just set and forget. It's just rock n' roll, it's fantastic.

Tech Update

OmniaTools File-Based Audio Processing Software

Telos Alliance's OmniaTools file-based podcast and on-demand audio processing software is available to content creators.

The company describes them as enterprise-class tools that are automated and require minimal effort to set up.



OmniaTools does the work to deliver a consistent signature sound automatically without the need for human intervention. Users simply drop the audio files into a watch folder, and OmniaTools will create a new, improved version, saving time by processing large numbers of audio files quickly and automatically.

OmniaTools complies with North American and international loudness control standards and includes APTO loudness processing; Omnia.9 processing; hot folder or API-driven workflows; file-type auto-detect; and helpful presets.

For information, contact The Telos Alliance at 1-216-241-7225 or visit www.telosalliance.com.

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 Christavus
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 Radio Free
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StreamGuys provides growth platform for RFEN

CDN and SaaS tools help aggregator support broadcasters with live streaming, podcast hosting and distribution



More info
 Contact Jason
 Osburn at
 StreamGuys at
 1-707-667-9479
 or visit www.streamguys.com.

Radio Free Entertainment Network Ltd. is a broadcast and internet streaming radio network playing the music of renowned and independent artists as well as local talk shows. We are dedicated to empowering our communities to promote educational, civic and cultural development by amplifying the voices of the traditionally underrepresented.

Its origins date to my tenure as general manager of grassroots radio station WMVU(FM), Radio Free Akron. When we decided to start broadcasting WMVU online in 2019, we chose StreamGuys as our streaming service provider at the recommendation of our engineer Blake Thompson.

With our success in streaming WMVU and my desire to bring more community to the world through music, I wanted to expand our efforts into a full-service radio network to help more people get their content out. I approached the principals at WMVU with my idea, and launched RFEN in March 2021 with co-founders Warner Mendenhall and Shuaib Meacham.

RFEN now hosts and aggregates live content from a growing roster of stations beyond the Akron area including Youth Artist Network Radio from Waterloo, Iowa; hip-hop station WJJN(FM) in Dothan, Ala.; and urban gospel station WINW(AM) in Canton, Ohio.

We use a broad range of StreamGuys

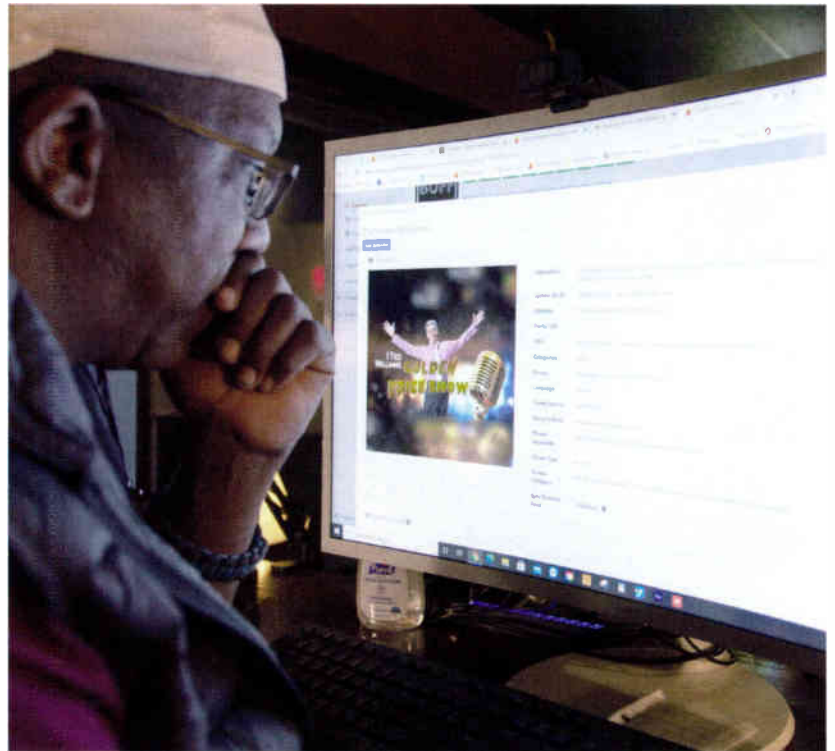


Photo credit: Thomas Mendenhall

solutions. In addition to delivering streams over its CDN, we use the SGplayer HTML5-based multimedia player and rely on analytics tools such as SGreports and SGmon to monitor and measure our operations and audience traffic. StreamGuys created an Alexa skill for WMVU to allow the station to be accessed easily on smart speakers.

We also used StreamGuys partner SoCast to create our website and mobile app, and products such as encoders from StreamGuys partners including Videon and Telos.

While at first we focused on live streaming, we added podcast hosting and distribution at the request of our clients. StreamGuys once again made it easy for us to expand our offerings,

and we use SGrecast for podcast management and publishing.

In addition to audio, we are starting to use StreamGuys services for video. We are using SGrecast to manage video podcasts and delivering them over StreamGuys' CDN.

I love the reliability, great sound and functionality that we get from StreamGuys' streaming tools and SGrecast, but the number one thing I like about StreamGuys is its customer service. I can call them at any time, and they treat me like I'm a multimillion-dollar client.

I am not an engineer, so having StreamGuys provide managed services is worth every penny in taking the technical load off me and my team. 🙌

Above
 Christavus
 Dominice at work
 with StreamGuys'
 SaaS tools.



Tech Update

Multiple Streams, One Wheatstone AoIP Appliance

Wheatstone's AoIP appliances Wheatstream and Streamblade make it possible to siphon multiple program channels directly from the AoIP system, optimize the audio according to the rules of streaming and deliver all to the CDN along with relevant metadata.



These are Linux appliances that can be added to a WheatNet-IP audio network or, in the case of Wheatstream, any AES67-compatible studio system. No Windows drivers, updates or PCs are needed.

The company says having a purpose-built processing chain for each individual stream instance means that broadcasters can increase the quality of streamed content using processing techniques that optimize the performance of audio codecs.

For information, contact Wheatstone at 1-252-638-7000 or visit www.wheatstone.com.

Tech Update

Podcasting With Rushworks, No Operator Required



Rushworks says its VDESK Video Podcaster is an integrated PTZ production and streaming system to produce an engaging, multi-camera video podcast.

For interactive dialogue, the system includes Talk-Take active microphone detection and switching capability, which switches cameras and camera presets based on the conversation.

The software is programmed to provide "natural" switching timing and intervals to avoid abrupt switching when speakers are detected. A "chaos" mode takes a wide shot when, as often happens, several people start speaking simultaneously.

The systems can store hundreds of video clips, graphics and lower-third identifiers, and it integrates remote meeting platforms such as Zoom, Teams and others.

The company says no operator is required during a podcast. Once the recording starts, everything can be automated throughout the session.

For information, contact Rushworks at 1-888-894-7874 or international at 1-469-454-9393 or visit www.rushworks.tv.



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Comrex Opal makes full-duplex audio magic

“Great Night” podcasters get in-synch with low-delay interaction and delivery

We started our podcast “Great Night” in January of 2009. We’ve gone through several names, and along the way we’ve had several Billboard-charted comedy albums and have developed a large and loyal subscriber base. Currently, we’re doing a live variety show every Tuesday night, with a video component that we stream over Twitch and publish on YouTube.

For 11-and-a-half of those 12 years, we lived in different states. For much of that time, we were doing the thing that has essentially become the default podcast comedy technique during the pandemic: We were using Skype and recording our audio locally, then editing it together in post-production.

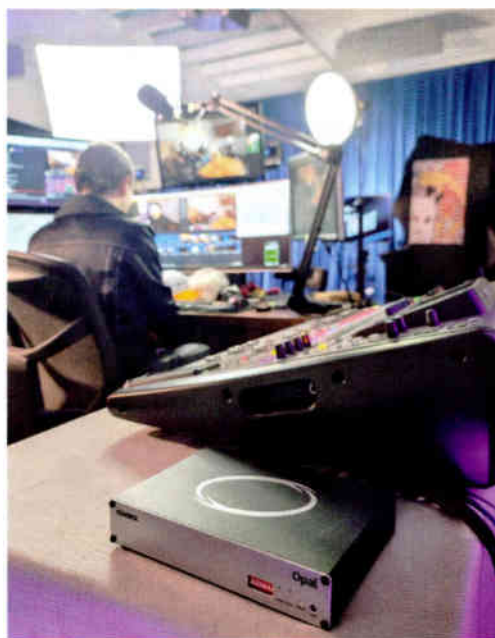
But the delays and hiccups caused by Skype were intrusive, and we wanted to find a full-duplex solution.

We learned about the Comrex Opal from a friend of ours who works at The Blaze. We had some challenges configuring our IP networks, but once it was set up, it was easy for everyone to jump onboard and learn how to use it.

We would use video from Skype and connect our audio through the Opal, and there was an immediate difference in our audio quality. Even

Writers
Brian
Brushwood
and
Justin Robert
Young
Hosts, “Great
Night”

More info
Contact Chris
Crump at
Comrex
at 1-978-784-
1776 or visit
www.comrex.com.



the milliseconds between moments. Just as it’s not possible to have an in-depth conversation over walkie-talkies, it’s equally impossible to preserve that nuance over Zoom and Skype. You need full-duplex real-time audio if you want to create real magic in audio.

Only Opal has brought us that experience.

When we shifted to Opal, our audience noticed. We got a lot of feedback from our listeners about the change — they couldn’t identify exactly what was different, but it felt electric. Suddenly we were both able to talk at the same

time without any delay. when Skype was failing, the Opal audio would continue to be precise with low delay, and it felt as though we were in the room with each other.

Skype has been the standard for podcasting forever, but not because anyone likes it. If you get a group of podcasters together in a room, eventually they’re all going to complain about Skype. People use it because it works well enough and most of us know how to fix it when it’s broken.

But every conversation, every interview, every interaction has an ebb and flow that happens in

We have this weird fixation on Billy Joel, and we’ve been making Billy Joel jokes and singing parodies of Billy Joel songs for a while now. Suddenly, once we got Opal, we could harmonize. We could overlap our jokes and pick up on what each other were saying without having to deal with Skype ducking our audio. We were finally able to do our material in the best way possible.

A lot of podcasters think audio quality issues can be solved by local recording, and certainly that can be edited together even though it adds another layer to post-production. But they really don’t realize what an audio delay does to active conversations.

In a medium that is all about where a conversation goes, whether it’s comedy or a panel discussion, high-quality and low-delay audio is irreplaceable. Opal is the solution that every podcaster doesn’t realize they need. 🎧

Above
The Opal on one end of the “Great Night” production.

LOW PROFILE MIC BOOMS: No Springs Attached (Microphone/Shockmount Optional)

| | | | |
|------------|------------------|-------------|-----------------|
| AMB22-4MOT | AMB16-4 MINI MOT | HMB-14-4MOT | HMB8-4 MINI MOT |
| AMB-22-4 | AMB16-4 MINI | HMB-14-4 | HMB8-4 MINI MOT |
| AMB-22-4E | AMB16-4E MINI | HMB-14-4E | HMB8-4E |

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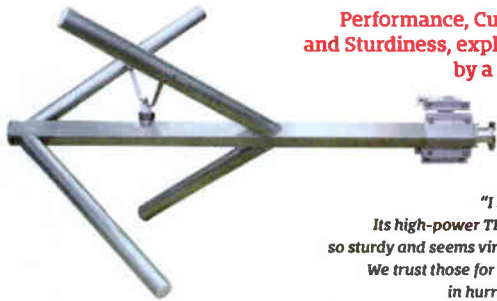
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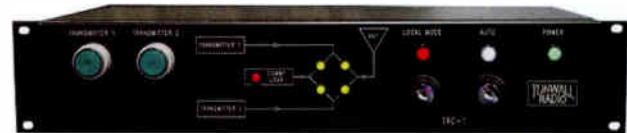
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1. Publication Title: **Radio World**

2. Publication Number: **3086**

3. Filing Date: **26/9/2021**

4. Issue Frequency: **Bi-Weekly**

5. Number of Issues Published Annually: **30**

6. Annual Subscription Price: **Requester**

7. Complete Mailing Address of Known Office of Publication (Not printer) (Street, city, county, state, and ZIP+4):
**Future US Inc.
 11 West 42nd Street, 15th Floor
 New York, NY 10036-8002**

8. Complete Mailing Address of Headquarters or General Business Office of Publisher (Not printer):
**Future US Inc.
 11 West 42nd Street, 15th Floor
 New York, NY 10036-8002**

9. Full Name and Complete Mailing Address of Publisher, Editor, and Managing Editor (Do not leave blank):
**Carmel King
 11 West 42nd Street, 15th Floor
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PS Form 3526-R, July 2014 PSN 7530-09-000-8855

13. Publication Title: **Radio World**

14. Issue Date for Circulation Data Below: **September 1, 2021**

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PS Form 3526-R, July 2014

Shortwave memories

Thank you for the article in the Sept. 1 issue by James Careless, "Shortwave Radios Keep Up With Tech."

When I worked for VOA — actually the International Broadcasting Bureau, later called the Broadcasting Board of Governors and then the U.S. Agency for Global Media — I believe upper management thought people in Djibouti had high-speed internet and laptop computers. In reality they lived largely in small huts made from corrugated roofing iron. They were lucky to have a radio.

When I was 12, my uncle had a TV shop as a second job. He fixed up a 1930s model radio with shortwave bands beside AM. It had the tubes with six or seven pins, shaped like a Coke bottle. I listened to VOA, the BBC, Radio Moscow and HCJB out of Quito, Ecuador.

This experience led me to ham radio, a job at the local radio station to earn money for college, a role at 17 in helping to build KFTW in Fredericktown, Mo., a degree in electrical engineering and, at the end of my career, the



“ I listened to VOA, the BBC, Radio Moscow and HCJB out of Quito, Ecuador. ”

job with IBB.

The first time I ever doubted what I heard on the radio was when Radio Moscow announced that the East German secret police had discovered a tunnel into East Berlin to smuggle spies into the German Workers Paradise. I thought “that was really people trying to get out of East Berlin.”

Decades years later, long after the collapse of the Soviet Union, I found out that the CIA had tunneled into East Berlin and tapped the phone lines of the secret police!

*David R. DeSpain, P.E., W0BCG
Ft. Worth, Texas*

Shortwave's huge audience

It was interesting to read the shortwave article. It was also high time to address the issue of SW transmissions, as the death of radio, of shortwave and even of medium-wave is being aired again while the progress of streaming and podcasting is hugely hyped — again trumping global realities.

The article would have benefitted by stressing the actual huge size of SW listening. BBC World Service alone has an estimated weekly audience of 269 million, with radio delivering around 150 million.

This top international broadcaster has 200 transmitter sites, of which four are high-power AM, with 12 others hired. Content is distributed to 800 locations globally (often using SW) for direct broadcast or inclusion in partner broadcasts. And AM services reach many tens of millions across Africa and the Middle East, the future potential audience of DRM shortwave as well.

The Radio World piece was aimed mainly at the enthusiasts, as indicated by the receiver prices mentioned. The average non-enthusiast listener who has a laptop

with connectivity would probably just listen to radio via the internet.

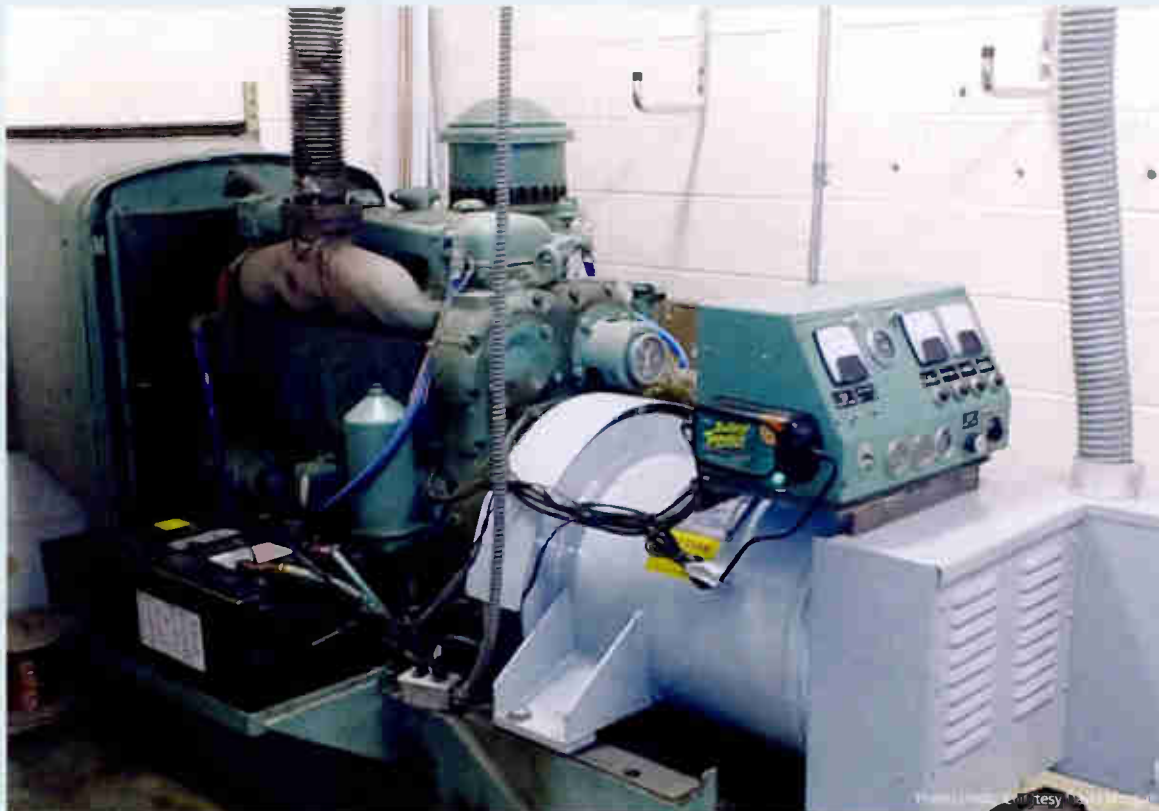
There is definitely merit in portable SDRs, which (depending on price) will likely keep some of the audiences and make it easy for them to pick up analog shortwave but also DRM.

India, China, Russia, U.K., even Brazil, Pakistan and other countries are testing, broadcasting or seriously considering shortwave DRM at the moment.

However, DRM — the natural and only son of analog SW, with huge advantages in spectrum, energy and audio quality — does not get a mention in the article. This is definitely a missed opportunity, as some of the big public broadcasters mentioned — BBC, All India Radio, Radio Romania etc. — are already in this space and report excellent reception and increasing listenership.

Most of the new DRM receiver solutions cater to both the analog and digital versions of shortwave reception. Work is afoot to deliver more affordable receivers aimed precisely at the huge and less affluent shortwave markets of Africa and Asia.

*Ruxandra Obreja
Chairman
Digital Radio Mondiale Consortium*



The new transmitters I installed at my two (now-gone) stations featured automatic restarts — first two faults would pause then reapply HV, while a third would shut off and inhibit it. This was essential to protect the \$10,000–15,000 IOT finals from damage.

I declined to wire the transmitters' fault-reset inputs to our remote controls in fear that a less-experienced MC op might destroy the finals or other expensive parts by repeated resets.

If you have spare status inputs on your remote, look into adding indicators that could warn you of impending problems and help you resolve little matters before they grow, or provide additional

evidence that may help you decide between a simple "reset" visit and a major repair effort.

Also useful: temperature and light sensors; door switches; and fluid-detectors, which are easy to install and provide inexpensive insurance. Example: A simple "homebrew" pair of opto-isolators added to my Kohler transfer-switch alarm panel would confirm that all was well and whether we were on utility or generator power.

A personal note on safety: I'm truly grateful to have a touch of OCD. It has helped keep me (and others) alive when working anywhere near power.

Years ago, I was reunited with an old UHF TV transmitter that had seen better days. It featured a pair of doors that opened in front of a high-power Klystron (only 32 kV connections atop it!) along with various "deficiencies" like uncovered AC relays in another door and a "failed-shortened" interlock switch in yet other. A consulting engineer had come close to being electrocuted there months earlier, partly because the station engineer also misinterpreted his directions.

My mind insists on "pointing and saying" before I do anything potentially dangerous. Remember: You have many opportunities to get it right, but you may have only one chance to get it wrong.

Cheers and stay safe!

*Michael Shovan, CBTE
fd&t technical services
Newburgh, N.Y.*

Above
Safety considerations should be paramount when working with systems like generators.

30

Genset reset rethink redux

In his Aug. 4 letter "Genset reset rethink," Bob Meister criticized an earlier reader tip shared by John Bisset about resetting a generator fault remotely.

I couldn't agree more with Bob on this matter! Safety should always precede convenience, particularly where electrical power is concerned.

There had to be a valid reason for the generator fault in the original situation described by John Bisset. Merely resetting it remotely without knowing the cause is bad practice.

“ You have many opportunities to get it right, but you may have only one chance to get it wrong. ”

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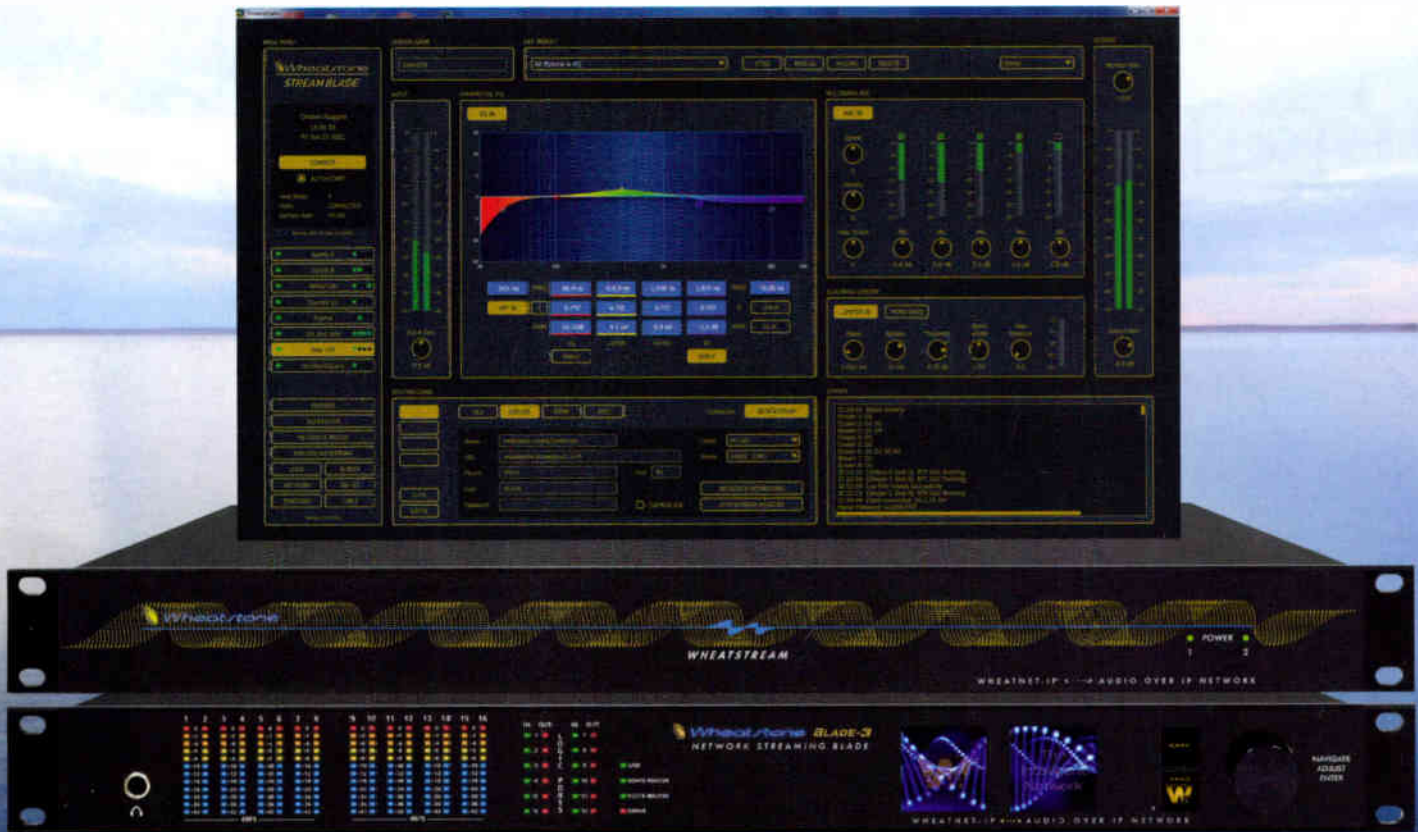
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