

RADIO WORLD

Your guide to radio technology

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FUTURE

KRFC raises its profile

The volunteer-powered station in Fort Collins has increased power to 50 kW.

Supply chain nightmares

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Tell us your story

You've done the work ... why not celebrate it?



Paul McLane
Editor in Chief

I love learning about new projects, and I hope you'll tell us about yours.

In this issue Elle Kehres gives us a peek at KRFC's new tower and antenna serving the area around Fort Collins, Colo., with 50 kW.

The noncommercial, volunteer-driven station started fundraising in 2018 and hoped to complete work in 2021, but due to COVID, supply chain

headaches and increased costs, they finally went live with their signal on May 12.

The initial budget was just under \$300,000 but the project ended up costing close to a half million. But it benefited from what Executive Director Jen Parker called an "epic" capital campaign that even included New Belgium Brewing producing a limited edition beer called "Power the Tower Pale Ale."

KRFC figures that its upgrade increased the population in its footprint by more than 60%, to almost 580,000 people.

Shown below are Jen Parker and Chief Engineer Matt Schilz embracing at the ribbon cutting.

You might think Radio World already knows about all the great new RF and studio projects that are happening. While we become aware of a good portion of them, many take place without much public attention. I'd love to hear about them all.

So if you have upgraded or built a new studio or air chain, let me know. Maybe we can tell your story.

As always you can reach me by email to radioworld@futurenet.com. It comes right to me.



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OPINION

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EMF Breaks Ground

Educational Media Foundation has begun construction of its new global headquarters near Nashville.

EMF is the parent company of K-Love and Air1, the largest Christian music radio networks in the U.S. Heard in all 50 states on more than 1,000 signals, it is also among the country's top 10 U.S.-based audio streamers.

The organization employs nearly 500 people and is transitioning its headquarters from northern California. It had announced that plan early last year, describing Nashville as the heart of the Christian media industry.

The nonprofit broadcaster already has some studios and offices in the area; however, its new office building and worship center will be built on its large property in the Berry Farms community of Franklin, Tenn.

At the groundbreaking in May, CEO Bill Reeves said, "I really feel like we're standing on sacred ground here. I feel like God brought us to these 11 acres." He thanked his predecessors, former CEOs Bob Anthony, Dick Jenkins and Mike Novak. "I never want to forget the legacy of the folks who built this ministry," he said.



Sam Wallington, EMF vice president of operations and engineering, was quoted in an event summary saying, "This land is not another office building project. ... What will come out of this property has the power to change this planet. ... We are not here to make a name for ourselves, we're here to [help] make Jesus famous. This is a place where we each get to play a part in taking the hope of Jesus to the hurting nation that we live in, as well as the world, through books and film and video and podcast, events and streaming, and yes — radio."

Wallington's remarks included a prayer for the protection of contractors and subcontractors and others involved in the construction. And musician and author CeCe Winans led an a capella version of "Amazing Grace (Praise God)." 🙏

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Writer



Randy J. Stine

Longtime news contributor wrote here recently about the proposal to make Daylight Saving Time permanent.

Supply chain constraints rock equipment suppliers

Parts shortages delay broadcasting projects as prices balloon

C OVID-19 and supply chain woes have plagued broadcasters hand in hand for the past two years. But while the pandemic ebbs and flows, parts shortages seem to continue unabated.

Based on what Radio World has gleaned from interviews with a cross-section of suppliers, the global shortages, particularly in chips, will not end anytime soon. That means broadcasters will wait longer for equipment, which affects timelines for projects, replacements and repairs.

Suppliers say fires at multiple manufacturing plants combined with a shortage of raw materials disrupted chip production, which has led to interruptions of electronic equipment production downstream.

The shortage of components also has pushed up prices. Coupled with overall inflation, increased demand for electronic gadgets and COVID lockdowns, the price of some broadcast equipment has jumped significantly.

Even the Suez Canal blockage last year played a role, increasing logistics problems and the cost of shipping and transportation globally.

"Huge effort"

Broadcast suppliers describe a stressful 26 months, with longer lead times and price increases for products of 10 to 20% in many cases.

"Lead times are mostly affecting electrical components, such as ICs," said an executive with a leading automation company, "but price increases are affecting everything,

from paper in the instruction manuals to the metal chassis and screws.”

Equipment makers buy a variety of components — from resistors to capacitors, chipsets to screens — from a range of suppliers around the world. All categories have been affected, they say.

“Our purchasing team buys materials globally from almost 150-plus suppliers, and the lead times from almost all suppliers have increased substantially,” said an executive with a transmitter manufacturer.

“In some cases, the lead times have jumped from eight weeks to 54-plus weeks. We have seen a huge increase in the prices of almost all materials, starting from small mechanical hardware parts to customized products.”

Rafael Pérez López is an application and sales engineer for Prodys, a codec manufacturer based in Spain. He said failures of major electronic component manufacturers created a domino effect that has resulted in unaccustomed lead times for customers.

“This is something that we really regret. Our company is making a huge effort to search for components in the most unlikely places and, if necessary, implement alternatives thanks to our R&D department.”

Even Xperi in its first quarter earnings statement earlier this year cited supply chain issues for key components, contributing to a drop in revenue for its Connected Car division, which includes HD Radio and DTS AutoStage. The company reported revenue for Q1 2022 was \$20 million compared to \$23 million during the same period in 2021.

“Unheard of”

Some equipment companies say they were reasonably well insulated from component supply issues early in the crisis but have since suffered shipping delays.

The chip shortage can set off unfortunate chains of events.

“For example, if we can’t get a component, we need to source a substitute and then test it, or in some cases redesign a board to allow integration of new components,” said an executive for a major codec manufacturer.



“You’re talking about \$168 for a chip. It’s crazy.”

Above
Told that Radio World was working on an article about supply chain issues, Ben Barber, president/CEO of inovonics, sent this photo. “Here I am with a box that cost us \$30,000,” he wrote.

chip that we normally pay \$14 and increase that price by a factor of 12, you’re talking about \$168 for a chip. It’s crazy.”

Inflated costs of components ultimately get passed along to the consumer, suppliers told Radio World.

“We have had to increase prices by 5% so far, and will likely need to do another price increase soon,” one source said.

“It’s not just the supply issues increasing the cost of goods though. Shipping has doubled in cost over the last couple years. This is partly due to the increase in gasoline, but also because of the increase of online shopping/home deliveries. The cost of shipping affects everything and will continue to be a problem.”

Intelligent shopping

For manufacturers, these trends have increased the importance of having managers who are dogged at

“As you can imagine, this creates delays and additional costs that need to be factored into product pricing decisions.”

Another radio automation supplier reported lead times of up to 52 weeks for some parts. “Unheard of before. And even if you have parts on order, there’s a fair chance the manufacturer won’t keep the promised ship dates. It’s been painful.”

An executive with an audio processor manufacturing company described the current parts buying process as untenable.

“There are two factors involved in purchasing components; the first is delivery and the second price. During the past two years, both have been totally unrealistic,” he said.

This manufacturer typically purchases the bulk of its components from places like Digi-Key, Mouser, Arrow and Avnet, according to the executive, but now “when we go to their websites you see zero in stock and delivery being late 2022 or even 2023. This goes for just about every semiconductor we use.”

As an example, for microchips used in its equipment to keep accurate time, the company usually pays 85 cents, but it recently received a shipment from an offshore broker and paid \$10.50 each. “That’s a 12 times markup. When you consider a



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Has It Hit You?

Have you been affected by parts shortages or severe price hikes? Email radioworld@futurenet.com with "Letter to the Editor" in the subject line.

researching supply sources, savvy about inventory management and good at "smart buying."

For instance an equipment manufacturer may purchase parts with a longer-term focus. "Not only has it helped us keep our products in stock, but it has slowed down our own personal inflation," said an antenna component manufacturer. "We have components purchased at old prices, and can pass those savings along to our customers."

Passive components are easier to find, according to another equipment maker, since they can often cross them or buy a better part that might be in stock. However, "anything semiconductor, and especially single-sourced, is very hard to find. That goes from small eight-pin ICs to 500+ pin BGAs." Ball grid arrays are used in surface-mount technology manufacturing.

Companies may feel obliged to stock up when they are able to find available parts. One manufacturing representative on the floor of the NAB Show referenced the traditional inventory goal of buying components just in

time to ship products, but said with a smile that for today's parts shopper, "Just in time" is now "just in case."

A transmitter maker told Radio World that being proactive has helped its purchasing team mitigate the supply issues and risks.

"We use historical trends and patterns in our forecast to order materials in advance to stay ahead of our competition. Most importantly, improved supplier relationships have helped us in the last two years to prioritize our deliveries from our suppliers."

One equipment vendor said supply chain issues were a hot topic for discussion by many at the spring convention.

"Broadcasters need to know that the supply chain crisis is very real and costs are going through the roof," he said.

"No one I spoke with at NAB was critical of us raising prices, but they were sympathetic to what we and the whole country are going through. Tariffs years ago were a nuisance [but] inflation and supply chain issues will be downright debilitating if they continue."

A prominent codec manufacturer said the company doesn't expect supply chain constraints to ease until 2024 or 2025.

But another observer told Radio World he and his company are more sanguine about an eventual return to a more normal marketplace.

"We are very optimistic and believe things are going to get better by early 2023. As we have been told by various sources, most semiconductor manufacturers have increased their capital spends to ramp up capacities and we should be able to see the investments start to pay off by at least by mid 2023," the executive said.

"Capacities are going to increase in 2023 and the existing imbalance between demand and supply is going to narrow."

“ Broadcasters need to know that the supply chain crisis is very real and costs are going through the roof. ”



Newswatch—NAB Decries Radio Fee Hikes

Radio station fees would increase around 13% in fiscal 2022, according to the proposed schedule released in June by the FCC.

The National Association of Broadcasters called the hike "staggering."

Fees have been a bone of contention for broadcasters, who believe tech companies affected by FCC regulations should be paying their fair share and that the commission's

methodology of fee-setting needs to be revamped.

The proposed annual radio fees range from \$690 for an AM Class C in the smallest markets to \$23,585 for big FMs in major cities. An FM Class B1 station in a market of half a million people will see its fee increase to \$4,090.

"Unfortunately, the commission continues to unlawfully require broadcasters to subsidize the commission's broadband activities," the NAB said in a statement.

"For these local stations that are still recovering from the pandemic and face unique economic challenges in today's media landscape, such an unjustified increase

is devastating and risks undermining the unique locally-focused service that our communities rely upon. NAB stands ready and willing to work with the commission to ensure a fair and lawful payment regime."

The commission also is considering whether to increase the cut-off point below which small broadcasters would not have to pay because the cost of collection exceeds the amount collected; this "de minimis threshold" is currently \$1,000. The NAB wants it to increase that and the FCC is asking for public input, including on how costs are calculated.

Comments in MD Docket No. 22-223 are due July 5, and replies July 18.

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World Radio History



Courtesy KRFC

Writer



Elle Kehres

Content Producer, Radio World

KRFC celebrates a bigger footprint

Station increases power with a new tower and RF plant

Colorado-based non-profit KRFC(FM) installed a new tower and RF facility, upgrading its 88.9 MHz signal to 50 kW from 3 kW. The ribbon-cutting is shown above. The switchover took place in May and more than doubled its footprint to include communities as far south as North Denver and further east of Greeley, Colo. Extensive donations helped finance the project.

Until now, the “volunteer-powered” station did not own its own tower, leasing antenna space at its old site. Now KRFC can lease out space of its own.

Jen Parker is executive director.

RW Why was this important to the station and community?

Jen Parker: For the 19 years the station has been on the air, the signal has been very spotty due to the terrain and our 3 kW signal just wasn't powerful enough. It has been a dream for years to improve the signal and broaden the reach to be the true voice of northern Colorado. The new boosted signal gives a more pleasurable listening experience and exposes many more Coloradans to this wonderfully eclectic station that entertains, educates and informs our community members in a positive, nonpolitical and uplifting way.

RW Describe KRFC's physical airchain path.

Parker: The studios are in the heart of the Music District in beautiful downtown Fort Collins. The station uses a 950 MHz analog STL to get audio to both the new and, previously, the old site because they are near each other; we have ceased operation at the old site now.

The new facility has completely new equipment and is about 9 miles east of Fort Collins. After path challenges prevented use of a new unlicensed 6 GHz IP link, KRFC ordered a set of GatesAir Intraplex IP codecs and an Intraplex HD Link. We purchased an ERI LP antenna and a GatesAir FAX High Power transmitter.

The full-wave-spaced ERI LP antenna allowed for a low TPO near 7 kW. Although we could have located further south for more population coverage, KRFC wanted to be absolutely sure of a very strong signal throughout the entire city of Fort Collins.

Notable vendors for the project included Sabre Towers, the tower manufacturer; Broadcast Connection as broadcast supply vendor; GatesAir for transmitter and STL equipment; Cell Site Solutions, a used equipment shelter dealer; and Galvanized Endeavors for broadcast and tower construction.

RW Who was on the team?

Parker: I managed the launch of the campaign, the majority of the private donation relationships and the marketing and PR along the way with my incredible team. Our engineer Matt Schilz was the project manager along with several key volunteers with engineering backgrounds. Charles Anderson of Anderson Communications created the pattern and provided the necessary support for application and [FCC] filing.

The internal team helped with the entire process along with Sean Lamborne, our program and volunteer director, and David Vacek, our music director. 🎧



More Info

The online version of this story is longer and has many more photos. At radioworld.com, search “KRFC.”

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World Radio History



John Bisset

CPBE

With more than 50 years in broadcasting, the author is in his 32nd year writing Workbench. He handles western U.S. radio sales for the Telos Alliance and is a past recipient of the SBE's Educator of the Year Award.



Get in Gear

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Above

An assortment of the parts needed for the mic stand.

Right

The base of the stand is a bicycle brake disc rotor.

Below

The Zramo Condenser Microphone.



Workbench



Slam on your brakes and check this out

This DIY mic stand is one-of-a-kind (unless you build one too!)

Newman-Kees principal consultant Frank Hertel has been back at the drawing board. This time, he has developed a damped microphone desk stand.

It's a 15-minute project that costs about \$35 and yields a pretty snazzy-looking unique stand.

If you chose to add the Zramo Large Condenser Microphone, it will add another \$15 or so to the project (and you get a shock mount and pop filtering to boot). Total out-of-pocket is about \$49.

(Frank adds a word about the Zramo mic. That word is "excellent." He says you will be awed by the microphone's performance and quality of build, despite its low cost.

The mic is made in China and is unlabeled for rebranding. It comes with the shock mount and pop filter, necessary for close speaking.

Keep in mind that this is a phantom-powered microphone, and since it is a cardioid mic, you will need to add a marking to identify the front



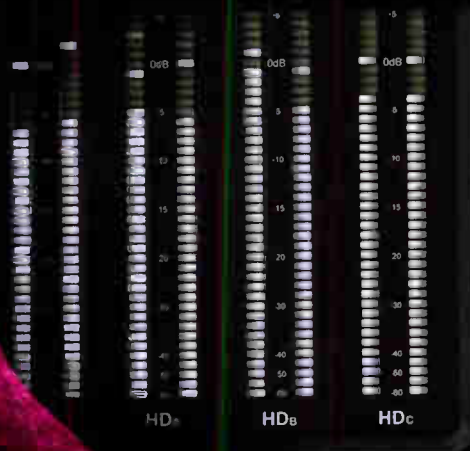
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Workbench



or speaker side. Frank used a piece of gold decorative auto trim tape for that purpose.)

The parts required are shown on the accompanying list.

If your shop is like Frank's, the cost of construction will be even lower. Frank's project cost only \$21 because he had most of the parts sitting on the shelf from other projects. Even if you need to purchase all of the parts, the \$49 will yield you a very well damped desk stand and useful condenser microphone.

The desk stand was something Frank decided to fabricate for use with the mic. since he had most of the parts on hand. One lucky aspect of the project is that the holes in the microphone flange matched the dimension spacing of the holes in the Dymoece Brake Disc. So all he needed was a screwdriver to bolt the two pieces together, and a pair of scissors to trim the "felt feet" to fit the contour of the brake disc. Frank also used a black "paint pen" to color the felt feet where they were visible through the top holes of the brake disc.

Frank adds that the rumble feed-through from the countertop and through the base of the fabricated desk stand is minimal. It slides easily and makes little noise in the process.

It is an easy project that happened to not require drilling or cutting; everything automatically fit. The photos show the construction. If you choose the Zramo mic, remember that it needs phantom power.

Let me know how your project turns out. Send high-resolution pictures and comments to johnpbisset@gmail.com. Much thanks to Frank Hertel for a fun project. 🎙️



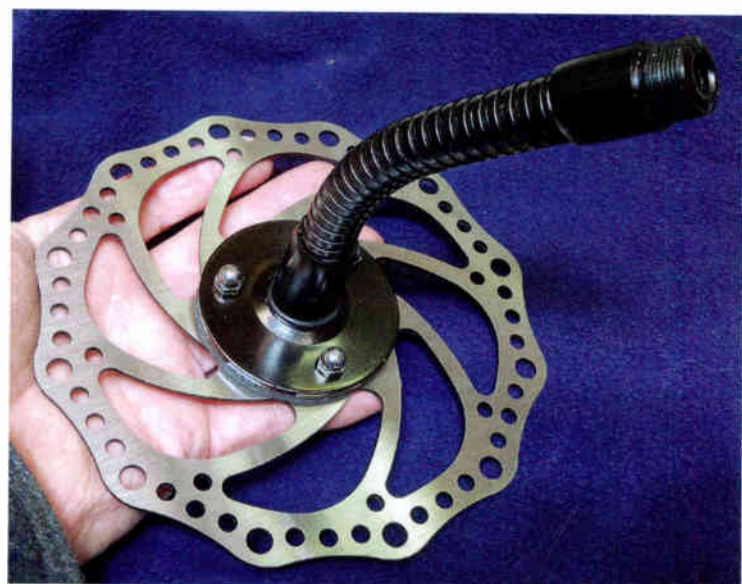
Far Left
The On-Stage mic flange is first secured to the brake disc.

Left
The Gator Frameworks gooseneck screws into the mounted mic flange.

Above right
The mic flange mounting holes line up with the pre-drilled slots in the brake disc, making assembly quick and easy.

Below right
The mounted components, ready for a mic.

Below
The completed project.



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1 Pk	160mm Brake Disc Rotor (2 per pack)	Amazon Dymoece 160mm	\$11.95
1	2.3" Dia. Microphone Table Mounting Flange	Amazon On Stage TMO8B	\$9.00
1	6" Long Microphone Flex Gooseneck	Amazon Gator GFW-MIC-GN6	\$7.00
1	Optional: Large Diaphragm Condenser Microphone	Amazon Zramo TH901	\$14.90

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Writer



James Careless

Award-winning journalist with experience in radio/TV broadcasting, AV equipment, system design and integration.

HD Radio slowly gains ground in Canada

Evanov is on board, and Corus has been trying it out

Even though the Canadian government has not officially endorsed the HD Radio broadcast standard, the number of digital stations in the country seems to be growing. The website HDRadio.com now lists about 30 stations that air about 60 HD Radio channels, including multicasts.

More Canadian broadcasters seem to be testing the HD Radio waters. This is notable given the country's failed launch of government-endorsed DAB digital radio in the 1990s. A lack of DAB receivers and original content DAB-only stations (broadcasters simulcasted their AM/FM content) resulted in Canadians not tuning into DAB, and the format was abandoned in Canada in the 2010s. According to WorldDAB.org, 73 Canadian DAB stations were on air in 2008.

Given the money broadcasters spent on DAB digital radio in Canada (and on AM stereo before that), Radio World wondered what is motivating Canadian broadcasters to consider HD Radio today. Here's what three of them told us.

Three case studies

Evanov Communications owns and operates 16 radio stations across Canada, including in the major markets of Winnipeg, Toronto, Montreal and Ottawa.

"Four of our stations have already gone HD and there are plans for further rollouts," said Paul Bury, the company's director of engineering and IT.

"Our first HD Radio rollout was CKPC(FM), an 80,000-watt blowtorch in Brantford, Ontario, on Nov. 18, 2019. CIDC 'Z 103.5 FM,' our flagship station, followed soon in the summer of 2020. CHLO AM 530 (Brampton, Ontario) became Canada's first AM station using HD Radio technology in June of 2021. And a flip of CKJS 810AM Winnipeg to 92.7FM and erection of a brand-new 625-foot broadcast tower gave us a chance to become the first stations broadcasting an HD signal in Manitoba in September of 2021."

Evanov has embraced HD Radio because "we strongly believe that the traditional broadcast bands will have to evolve and offer some kind of digital offering in the near future," Bury told Radio World.

"As trends change and listeners become more accustomed to receiving more eye-pleasing and advanced program data from web services, digital broadcasting will continue to be the only way that traditional broadcasters can stay competitive. As well, in the case of AM 530, we were hoping that addition of HD would help combat the growing problems of noise and subpar audio quality that has plagued the AM broadcast band for many years. Our hopes are that the higher-quality audio will help to revitalize the historic AM band."

Steve Huber is president and owner of Huber Radio Ltd., which operates CIAT "Cat Country 98 FM" in Assiniboia, Saskatchewan (population 2,389). It is a country music station "designed with a rural farming audience in mind," said Huber.



“When a farmer spends upwards of a million dollars on a combine, it should likely come with HD Radio.”

Below
An HD Radio display shows Artist Experience metadata of Huber Radio station CIAT(FM).

Digital Radio

He installed HD Radio in 2021 "to give bragging rights to our little town of Assiniboia," he quipped. "But seriously, HD Radio delivers a better listener experience and I believe this will always win in the listener's mind."

"Now many of my area radio competitors are hell-bent on delivering ad revenue with the resale of websites and driving audiences to Facebook, YouTube and other social media platforms," Huber said.

"But doesn't it make more sense to offer listeners a digital experience via radio, using a technology that we understand and own?"

Corus Entertainment operates 39 stations and has tested HD Radio in three of them: CING(FM), which plays hot adult contemporary in Hamilton, Ontario; CKRY(FM), a country station in Calgary, Alberta; and CFMI(FM), a rock outlet in Vancouver, BC. Multicast channels of all three stations carry simulcasts of various Corus AM signals.

Corus Entertainment's answers to Radio World's questions were compiled by Greg Landgraf, manager of radio technology for western Canada; Andy Bingle, manager of radio technology for eastern Canada; and Phillip Anderson, broadcast engineer for radio technology in Hamilton.



Above
Huber Radio logos include HD Radio in the branding.

"HD Radio on CING(FM) was launched temporarily as a test in October of 2012," the Corus group wrote.

"Nautel contacted Corus to see if we were interested in trying HD in Canada, due to our 1,000-foot tower located in Stony Creek. This site provided a great coverage area, which included both a medium market as well as a major market."

In contrast, "HD Radio on CFMI(FM) Vancouver and CKRY(FM) Calgary was implemented primarily to provide the Broadcast Traffic Consortium with traffic data to HD-capable Garmin GPS devices," they continued.

"Corus, BTC and HERE Technologies had a relationship providing traffic data to Garmin devices via RBDS, and they wanted to start providing enhanced data via HD. The

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undertaking took place between June and December 2015. These initiatives gave Corus the chance to provide an HD signal to our FM listeners and an alternate signal to our AM listeners, in these markets.”

Reach, receivers and response

In general, the broadcasters expressed satisfaction with the reach of their HD Radio transmissions.

“For Evanov’s FM operations, we have found that the HD lock is very stable down to ~1 mV/m in the city and ~0.5 mV/m in rural areas on most vehicle radios we tested,” said Bury. “AM has a very strong lock down to about 10 mV in the city and 5 mV in the countryside, away from noise and interference.”

Evanov uses the Artist Experience feature on its FM digital signals, though not to display cover art. “In our tests we found that some radio models do not update the artwork correctly, and often it gets stuck displaying one image for weeks,” Bury said. “For this reason we simply use Artist Experience to display the station logos.”

As for the availability of HD Radio receivers in the Great White North? “Table-style and portable HD radios are relatively scarce in Canada and somewhat hard to find,” the Corus engineers replied. “HD radios are not standard in cars in Canada but are available from numerous vehicle manufacturers either on certain trim levels or in certain models.”

Bury said that according to Xperi, there are more than 4 million HD Radio-equipped vehicles in Canada, and one in three new cars sold in Canada comes equipped with an HD Radio receiver.

“But since most receivers switch to HD signal automatically, we noticed with our FM HD operations that most listeners didn’t realize they were listening to the HD signal or that HD was even included in their car radio.”

So what do Canada’s HD Radio listeners think of this digital radio system?

“Every single week we receive a phone call or email from a listener that just bought a vehicle with HD Radio, and when Cat Country 98 starts buffering in HD for the first time, it’s like they’ve discovered fire!” said Huber.

“We’ve had nothing but positive comments from our listeners and advertisers to the improved quality and program data offered by HD Radio,” Bury agreed. Better yet, this positive experience is boosting Evanov’s ratings, ad revenues and profits.

“The analog signal for our flagship Z 103.5 station has traditionally suffered from severe multipath interference in the downtown core,” he said. “HD Radio has made the signal extremely reliable in those places, which is very evident in our ratings. Every week since the launch of HD Radio has shown increases in audience numbers.”

With results like these, Paul Bury and his company have become HD Radio believers.



Above
The IBOC signal is reflected on monitoring equipment at Corus station CKRY(FM).

“The HD Radio rollout will continue for us here at Evanov Communications,” he said. “Next in line is a 50,000W multicultural AM station in Montreal. The tests on CHLO(AM) proved very successful with the station’s limited power of 1000W day and 250W at night, so we’re very eager to see the coverage in Montreal.”

Huber is glad he added HD Radio to his one station. “I absolutely love my radio station being on-air in HD Radio,” he said. “I hope to work with the great folks at HD Radio and encourage them to approach John Deere, Case IH and New Holland about offering this as a listening feature in agriculture equipment. When a farmer spends upwards of a million dollars on a combine, it should likely come with HD Radio.”

As for Corus Entertainment? Its team was impressed by the performance of the HD Radio tests.

“There have been discussions regarding adding more HD stations,” they said. “However, we have no immediate plans.”

Asked for comment about its technology in Canada, Xperi SVP of Broadcast Radio and Digital Audio Joe D’Angelo said, “One of the benefits of HD Radio is that it supports a market-based transition from analog to digital broadcasting, allowing radio stations and markets to transition as conditions allow. We’ve seen continued growth in broadcast signals throughout North America and an ever-growing number of cars equipped with the technology, currently approaching 90 million. In Canada, we are looking at a significant HD Radio uptake with 33 auto brands and 112 models.

“We are very encouraged by the ongoing support of Canadian broadcasters and stand ready to support their continued transition to a digital radio future.”

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「 FUTURE 」

Writer



T. Carter Ross

Former editor in chief of Radio World International.

Ennals gets rolling for Australian radio

New CEO of CRA says the radio sector is dynamic and resilient

This spring Ford Ennals took up the leadership of Commercial Radio Australia, the trade group representing the country's commercial radio broadcasters. He previously oversaw digital television and radio rollouts in the United Kingdom.



DAB broadcasting has achieved critical mass and provides a key enhancement of the radio listener proposition across the Metro markets. DAB is also now available in five regional markets. Australia's sixth largest city, the Gold Coast, rolled out in April. We would envisage that we will sustain a multiplatform listening ecology for the foreseeable future.

RW What are your first priorities as CEO?

Ford Ennals: The Australian radio sector is one of the most dynamic and advanced markets in the world. I am looking forward to building on the excellent work CRA has done supporting the commercial radio sector. Our primary focus is supporting our members grow commercial revenue from existing markets, as well as the expanding digital and audio markets.

RW What are the challenges for radio there and what are its strengths?

Ennals: Radio listening is very strong in Australia — ahead of the U.S. in terms of listening to radio and listening to audio online. It is also proving resilient in the face of digital competition from global music streaming and digital platforms. This is due to the power of Australian radio personalities and the importance of local and live content in the vast distances that separate Australian states, cities and towns.

The challenges are similar to all global markets as we see the shift [among consumers] from owned to streamed music and listening on smart speakers where global platforms act as gatekeepers.

RW Australia's an interesting market for digital radio. You have well established DAB services in some metros, but in much of the country, even well-populated places, radio remains solely analog.

Ennals: In Australia, digital listening is growing strongly both from DAB and online radio streaming. The level of online streaming in Australia is comparable to the U.K. and is an important priority for broadcasters as it provides enhanced data and opportunities to target listeners more specifically.

RW In the U.K., the BBC and private broadcasters worked together on the rollout of DAB, while in Australia commercial radio seems to be moving faster than the public-service Australian Broadcasting Corp. with DAB+. Is there more the ABC can or should be doing with digital radio?

Ennals: It's not for CRA to comment on the focus or progress of ABC Radio. Commercial radio and ABC have collaborated on key cross-sector developments, and ABC has been an excellent partner in terms of the development of RadioApp and the new Radio360 measurement methodology. In the U.K., there was similar and healthy cross-industry collaboration, as well as out and out competition for listeners.

RW What do you see as the potential for alternative digital radio platforms, such as DRM30, for expanding digital radio to more of Australia?

Ennals: The Australian market is well served by digital platforms and technology and we are all working together to optimize implementation in home and in cars. There seems to be a limited opportunity for alternative digital platforms in Australia.

RW Can you talk about your personal connections to Australia?

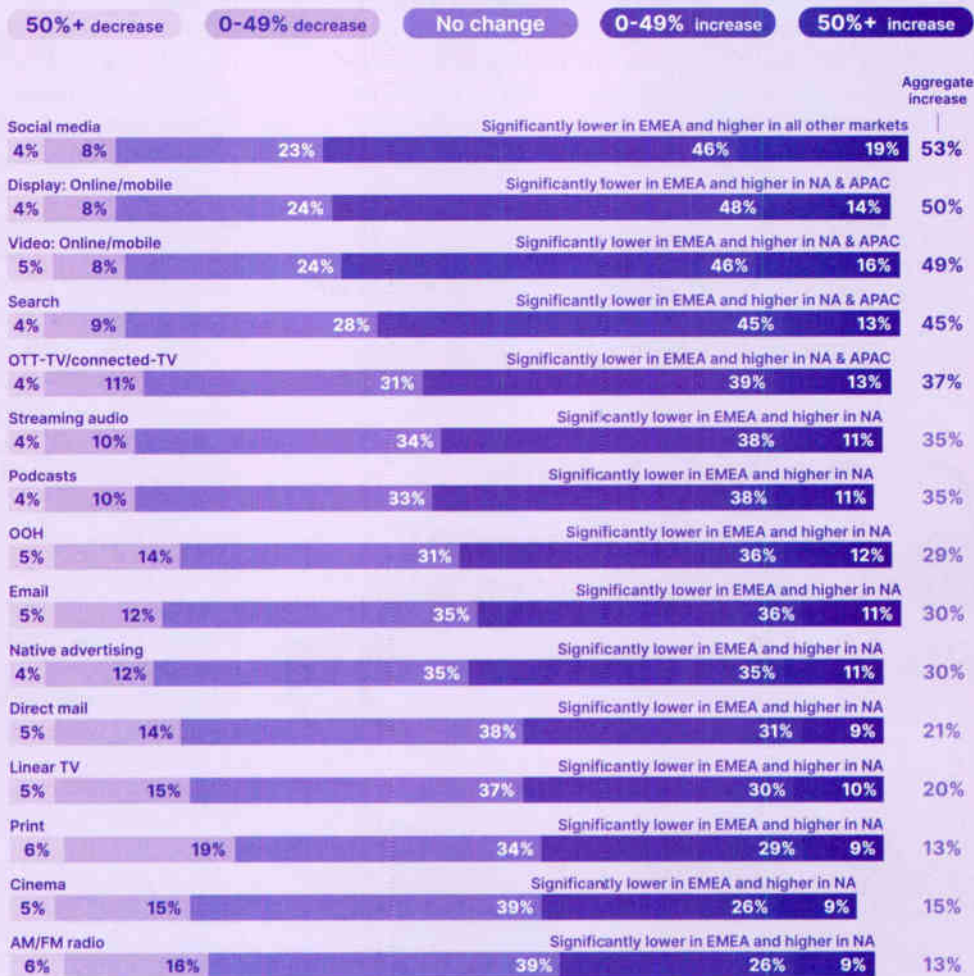
Ennals: My mother is Australian and was born and raised in a country town, Armidale, New South Wales, before attending university in Sydney then going to work in Geneva for the United Nations. As a child, I did spend some time at school in Armidale and still fondly think of those days running free in the bush and watching sheep being sheared. It's great to be back in Australia — it's a stunningly beautiful country, and I have been made very welcome here. **R**





Mark Lapidus
 Veteran multi-platform media executive with 30+ years' experience creating broadcast, digital, social and mobile storytelling content, consumer marketing and branding.

Expected budget change over the next 12 months among global marketers



Percentages represent responses to this question: How do you expect your budgets to change in the next 12 months for each of the following paid media channels?
 Note: The data may not sum to 100% because the charts do not display data for 'not applicable,' 'prefer not to say' and 'don't know.'

Source: Nielsen Marketing Report

Is radio becoming invisible to marketers?

Industry stakeholders must work smarter to change perceptions

Another wakeup call has arrived for the radio industry. It's the fifth annual Nielsen Marketing Report, which was published this spring. Titled "Era of Alignment: Future-focused strategies for brand building and customer acquisition," the study is based on survey responses from marketing gurus with budgets of \$1 million or more. The respondents manage marketing budgets for a variety of industries including retail, automotive, financial, health care

and many more. All of these categories have traditionally been heavy radio advertisers.

In this 30-page tome, radio barely has a seat at the table. It is mentioned just four times, as opposed to social media, which is addressed extensively in the report and cited by category 28 times.

The main thing a reader will take away about radio appears next to a chart showing perceived effectiveness of traditional channels: "Compared with paid digital, global marketers plan to increase their spending across traditional channels less,

particularly across mass-reach options like TV and radio. In addition to garnering higher consumer trust than many digital channels, TV and radio are more traditionally aligned with brand building and new consumer acquisition efforts.

"That said," it continued, "marketers plan to increase their ad spending across linear TV and traditional radio significantly less than across social media, where the aggregate increase is 53% among global marketers."

Deep dive

In case I'm not being obvious enough, what concerns me the most is that radio is barely mentioned among marketers with big budgets in what will be a widely-read Nielsen report.


Most of us are all too aware that radio has not been portrayed well by the trade media press in the last decade.

Advertising trade publications mostly ignore radio, or worse, feature anecdotal stories painting the medium as a quaint part of history.

There is a small amount of good news in the study. There may still be growth for radio in the next 12 months. The graph says it just won't be anywhere close to the growth in the advertising spend for social media, digital display, online video, search or connected television.

There is a lot of cool information in this report that deserves your attention. Even at a glance, you'll learn the latest about brand awareness, measurement, personalized data strategy and consumer trust. The report is free; search online for "Nielsen Era of Alignment."

Just like every other part of society, it's clear that the pandemic has shaken the entire advertising world and, according to this study, marketers are adjusting spend. No doubt this thought process will fluctuate. But I am confident that it can be affected through energetic advocacy.

The big radio groups, associations and other industry support groups have a clear mission to work smarter to change the perception of radio's reach, ability to sell goods and services, and cost effectiveness in delivering targeted audiences. Easier said than done, but the first step is universally admitting that there is a large problem to solve. Fortunately, there are many intelligent folks who work in the industry. Let's hope a leader will form a task group. 

“Radio is barely mentioned among marketers with big budgets in this report.”



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Kaminski

CBT

The host of msrc.com's Radio-Road-Test has been an RW contributor since 1997. He's reported for CBS News, Radio and American Forces Radio, among other outlets.
Twitter: msrc.com.



A multitool for mission-critical audio from CEntrance

Portcaster is a broadcast mixer plus recorder, with mix-minus

The CEntrance PortCaster has a small footprint with big audio production capabilities. So much so that it can replace separate preamps, limiters, USB audio interfaces and phone patches with a little box that can be held in the palm of a hand.

That box will produce the kind of audio that once took a room full of equipment to accomplish.

The product was introduced during the pandemic as a portable live-streaming and recording tool for podcasters and radio program hosts who want to add music, effects and a local or remote call-in guest to their "talk radio"-style show.

It is based on the MixerFace, the company's mobile recording interface.

"The original MixerFace featured a rechargeable battery and turned any smartphone into a portable live-streaming device with 24-bit/192 kHz audio quality," the company wrote. "As more customers began using MixerFace to create talk shows, they requested an easy way to add a live caller. With PortCaster, CEntrance added this ability, complete with the Mix-Minus feature used by radio stations

to prevent annoying audio feedback for the caller. Remote guests can be on a cell phone or VoIP."

The basics

The PortCaster in its aluminum case measures about 1-1/4 by 2-3/4 by 4-1/2 inches and weighs in around 10 ounces. It's tapped and drilled to fit on a small photo tripod, to save space where necessary.

This unit uses USB-C connections for signal and for power. A USB-C to USB-A connector is included.

The manufacturer says the PortCaster can be connected to a charger with no ill effect as long as the charger will output 5 volts at 2.1 amps. The literature suggests a charge will last around 8 hours. Three LEDs indicate battery status; they all flash intermittently when the battery charge depletes to 3%.

PortCaster has three inputs. Two are XLR-F mic inputs with optical limiters, Jasmine preamps and 48 V phantom power; one of those (Channel 2) is switchable to a TRRS jack for a smartphone connection. The Channel 1 input has a high-pass filter to cut thumps and rumbles. A third 1/8-inch TRS jack for Channels 3 and 4 can be connected to an aux input, like the output from an audio recorder.

Above

The kitchen table can be a broadcast studio with CEntrance PortCaster's multiple inputs and on-board recorder. The author is able to send audio and keep a record for archival purposes.



More Info

Visit <http://centrance.com>

Field Audio



With a TRRS patch cord, the PortCaster can record from a smartphone equipped with a headset jack (or adapter to TRRS, for iOS devices) and send a mix minus signal back to the phone.

For example, a feed with a local mic, a remote contributor via smartphone, and sound from a local (aux input) recorder could be sent via the USB-C connection and to the onboard recorder at the same time.

The mix-minus feed would include the local mic and sound from the local (aux input) recorder. It's generated

The unit has three outputs, the first of which is through a USB-C connection to the device (smartphone, desktop or laptop), which allows it to be used as a USB interface for a DAW program. The second output is a mix-minus connection via the TRRS jack to a smartphone or in the case of an iOS device, the proper headset adapter for that style of smartphone. The third output is an 1/8-inch TRS jack, which could be connected to a line input.

In a pinch, the PortCaster could be used as a mic channel strip, taking advantage of not just the 48V phantom power and the Jasmine preamp's 65 dB gain, but also the optical analog limiters.

Recording and more

The PortCaster includes a micro SD audio recorder that works independently of the other outputs. It records 24-bit/48 kHz stereo audio. The PortCaster can mix down to mono, for some streaming apps.

from the PortCaster's monitor feed. Because the recorder and USB interface work independently, making a copy of a session takes one press of the record button. The USB interface bit and sample rate can be set independently from that of the recorder.

Handy to use

CEntrance has testimonials from musicians and voiceover artists on its website. Good recommendations, those, but I needed to see how the PortCaster would work when I had to record an episode of "Radio-Road-Test" for my weekly feed.

I used a very simple setup: an Audio-Technica AT897 short shotgun mic and Koss Pro4AA headphones. Once a level was set, I recorded to the onboard recorder, then imported the recording from the PortCaster into Audacity for editing. The PortCaster drove the headphones easily; the audio was clear, clean and robust.

The PortCaster is designed to produce professional-grade audio in any situation. If one is doing a simple live shot over a smartphone, it's easy to send audio using the cell network. Once connected via USB-C, one can send audio using a web-based browser like Cleanfeed, or sending audio using proprietary apps from Luci Live, Comrex and Tieline, for example. The onboard recorder can make telephone interviews easy. Recording a two-mic podcast would similarly be easy, whether using the PortCaster as a USB audio interface to a laptop, or recording to its onboard audio recorder.

CEntrance sells the PortCaster for \$549.99 direct from its website and through audio and broadcast dealers. Available accessories include a pair of mics that will plug into the XLR inputs, thus making the PortCaster a handheld recorder.

The PortCaster has been described by other users as a "Swiss Army knife for audio." I'd call it a pocket-sized production studio that gets professional results. In fact, the only drawback for me was my wish that CEntrance had this available 15 years ago. 🎙️

“ The only drawback for me was my wish that CEntrance had this available 15 years ago. ”

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World Radio History

Slammed by storms, a Cumulus cluster rebuilds

In 2020, less than two months apart, Hurricane Laura and Hurricane Delta hit the studios of Cumulus Media in Lake Charles, La. Its building was left unusable.

"After the structural issues were addressed, including replacing the roof and repairing every wall, floor and ceiling, we completely rewired the entire building, and rebuilt studios for each station," said Greg Davis, chief engineer for Cumulus in Lake Charles and in Beaumont, Texas, an hour to the west.

The Lake Charles stations include KYKZ 96.1, KKGB(FM) Rock 101, KBIU(FM) Hot 103.3, KQLK(FM) Nash Icon 97.9, KAOK(AM) SuperTalk 1400 and KXZZ(AM) Sports Radio 1580.

The project included seven studios and two production rooms.

"Since water penetrated all exterior walls, we also had to completely replace the TOC," Davis said. "This included BSI's OpX automaton, network equipment, streaming, satellite and station monitoring equipment. We installed a Comrex Access system for remotes. And we rebuilt all sales, business and office staff's offices."

Key components include Axia iQx consoles, Telos VX Broadcast VoIP phone system, Omnirax furniture, EV RE20 mics, Wheatstone mic processors, Yellowtec mic arms, Cisco switches, Gatesair IPLinks and Middle Atlantic racks.

"While the studios were unusable, we brought our BSI OpX automation system to our neighboring market in



Beaumont, Texas," he said. "We used GatesAir IPLink200 units to transport audio over the internet. Though internet was difficult to come by immediately after, we later installed ViaSat satellite internet. While this was not ideal, it worked well to provide quality audio to the site when there were no local internet providers available."

Most of the new equipment was purchased through Broadcasters General Store.

You can read about this and numerous projects in the ebook "Spectacular Radio Studios." Find it at radioworld.com/ebooks.

Above
Stefanie Adams
at work in KKGB's
control room.

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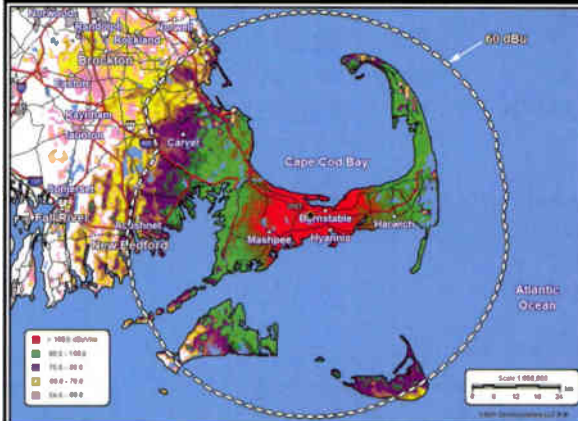
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Eric Smith

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Sound Off

Comment on this or any article. Email radioworld@futurenet.com.

These audio tools do a lot, many on a budget

Feed your listeners a clean signal and keep 'em engaged

I'm writing in response to a comment by Kevin Thomas of WDKC(FM) in the March 16 issue of Radio World. In Paul McLane's column "Station hacks: How to survive in a small market," Kevin asked for an introduction to mic processing.

When I hear "introduction," I interpret it to mean "teach me a bit about how I can accomplish what I need to, for the least amount of money possible." So here are some pieces of equipment that I've found helpful and that might serve Kevin's needs.

These are all based on my experiences and are just one man's opinion. I'm sure that other Radio World readers will chime in. I hope these help point Kevin in the right direction.

Essential tool

The best all-in-one voice processor that I've found, hands down, is the venerable Symetrix 528E, no longer made but available used or refurbished for a few hundred dollars.

It includes a mic preamp, de-essing, expansion/gating, compression, three-band tunable EQ and voice symmetry circuitry. For some people, the 528E is the only device they need.

Bonus tip: There are people who mod the 528E to make it sound "even better," such as Revive Audio (\$299 to mod your unit and ship it back to you), but for most people, the unit will be quiet enough and the audio is linear enough to use as-is.

I own more of these units than I can count and would never be without them. Even if you use some of the gear I'll describe next, you can still benefit from the 528E by feeding it a line-level signal instead of plugging a mic directly into it.

As an aside, just yesterday I was part of a LinkedIn thread with a top voiceover artist who stated that he uses and recommends downward expansion, such as the 528e offers and which, if used properly can be a godsend for people in less-than-ideal acoustic spaces.



Some people use it too aggressively and mistakenly think that it will solve their acoustical problems, which it won't, but I have been beating the drum about gentle downward expansion for decades and I believe it can be an important part of the original questioner's approach to his audio.

Making the connection

The quietest mic cables and interconnect cables I've found, at least within the realm of financial reality, are Canare Star Quad cables.

The construction of these cables quiets the noise floor and improves noise and handling rejection, plus they exhibit excellent audio quality. B&H tends to have decent pricing on these.

Barring Canare Star Quad, look at the super-affordable Hosa cables, which punch above their weight and of which I was an early adopter 40 years ago.

Quality mic

I primarily use the Shure SM5B microphone, no longer manufactured but which in my experience is simply the best-sounding mic for my voice and, I say as a former production director, producer, etc., for most people's voices.

I see them online for \$1,200 to \$2,000, so this is not for everyone's budget. (If you can't find replacement windscreens for them, I now have them available at www.5Bwindscreens.com.)

The thing that most people overlook about the 5B is its off-axis rejection, which is fantastic and which, in side-by-side comparisons, beats the off-axis rejection of even the esteemed Sennheiser 416, of which I also own a

Top Right
Canare Star Quad L-4E6S Microphone Cable as seen on the website of distributor B&H.

Below
Symetrix 528E, shown in a #TBT tweet from the manufacturer.



Audio Tips

bunch and use frequently. But the 416's sound simply doesn't compare to that of the 5B for most people.

Off-axis rejection is important for minimizing the amount of room-tone (ambience) that gets into the mic, and it's also very important for keeping everyone's audio clean in a situation where there are multiple mics open in a room at once.

If your studio and people's home spaces where voice tracking might occur aren't acoustically treated as they should be, off-axis rejection and gentle gating via the Symetrix 528E mentioned above, plus acoustical treatments of course, are your best friends.

I don't have much experience with less-expensive mics that might offer the desired benefits of sound quality and off-axis rejection. There are oodles of new mics out there these days, given that the manufacturers have been trying to capitalize on the work-from-home world; these are primarily USB mics.

The next-best-thing might be the Shure SM7B, which I've used at a number of radio stations and which is only \$399 new. But it ain't no 5B.

Compression

To most people, the thing that makes one sound "broadcaster-ish" is the compressor.

In addition to the compressor built into the Symetrix 528E, my other favorite devices are the FMR Audio RNC1173, the dbx 160X and the Aphex Compellor AX, all of which I own multiple of and use regularly.

The FMR RNC is still being made, an absolutely wonderful piece of gear. I'm sure it's on a lot of folks' "desert island" gear lists. The great gear designer and recording engineer George Massenburg has been quoted saying that if someone can't afford his GML 8900 — which as of this



Top

A photo of a Shure SM5B from the James Steele Vintage Broadcast Microphone Collection, University of Georgia Special Collections Library

Above

Focusrite Scarlett 18i8 Audio Interface

Below left

Behringer Xenyx Q1204USB Mixer

Below right

Auralex DeskMax offers portable absorption treatment.

writing is \$7,500 or more online — they should buy the RNC, which is less than \$200.

I use the 160X in series with the RNC, with the RNC compressing and the 160X doing peak limiting. The Compellor I tend to use by itself, and it's been an important part of the signal processing rack at stations where I've been an air talent and sometime talk-show host.

Warmth

The sound of any mic can be maximized (or, if you prefer, "improved") by plugging it into a great-sounding preamp.

To most people, "great-sounding" means warm and open, both of which I think you'll find in the Scarlett line of interfaces by Focusrite. These also have a built-in high-end EQ feature called Air that many find pleasing on certain voices and certain mics.

The model I own multiple of is the 18i8, which you can run four mics into and which tends to be less than \$300 used, so it won't break the bank.

Down and dirty

Now, if all this is too much for you to swallow price- or space-wise, my down-and-dirty recommendation would be to look at the Behringer Xenyx Q1204USB mixer.

It features four mic inputs, each with three-band fixed-frequency EQ and a compressor(!), all for less than \$200 street price.

The audio quality of this little mixer is far better than you might expect it to be. I confess to owning a number of these and their audio quality and low noise-floor are a pleasant surprise.

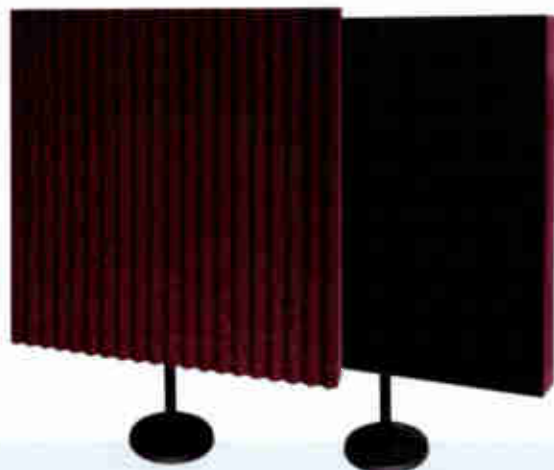
Our stuff too

I'd be remiss if I didn't mention that to maximize the sound of any gear in any room, you should implement acoustical treatments, and preferably a selection that provides broadband (all-frequency) control.

My company, Auralex Acoustics, has a number of products that are respected worldwide by top broadcasters, recording artists and voiceover people, so take a look at them.

If you don't have wall space available for treatments, consider stand-mounted, portable solutions. These can tame virtually any room if positioned properly. In fact, some world-famous voiceovers, I'm told, are cut by a notable talent in a large, reverberant space with a Neumann U87 (an ultra-expensive mic that's super-sensitive) and surrounded by Auralex stand-mounted Studiofoam treatments.

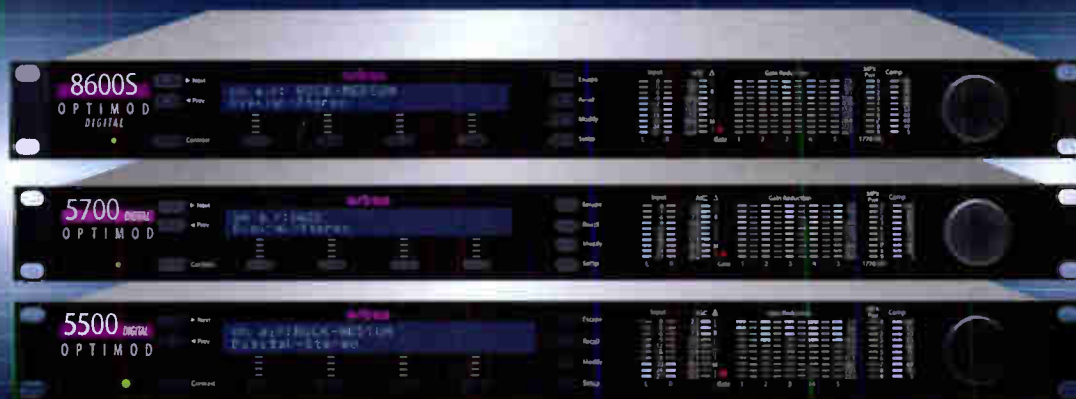
I hope that Kevin, and perhaps others, find my input helpful. Listeners absolutely hate hearing ambient, poor-quality audio, so let's feed 'em a clean signal and keep 'em engaged! 🎧





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