



RADIO WORLD

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A High-Level View of the NAB Show

In this issue, photos from all around the annual convention



RW photographer Jim Peck captured the Las Vegas Convention Center, lower right, from atop the High Roller observation wheel. The NAB estimated registered attendance at 103,000, compared to about 98,000 last year.

“Get Comfortable With Disruptive Ideas”

Radio contemplates rating methodologies, FCC field agents, podcasting and AM's future

BY LESLIE STIMSON

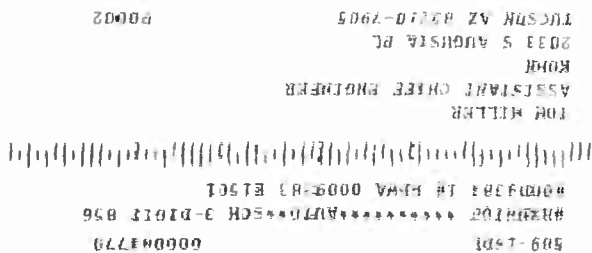
Some broadcasters are excited about the idea of using drones to check towers or improve their news and traffic coverage. AM's future is a big concern right now, as are Nielsen Portable People Meter encoding and FCC

plans to close many of its field offices. Podcasting is seen by PIDs, networks and their distributors no longer as an outlier but as a potential money-maker.

These are some of the radio themes evident at the recent NAB Show. Here's a roundup; find more coverage on

(continued on page 6)

Photo by Jim Peck



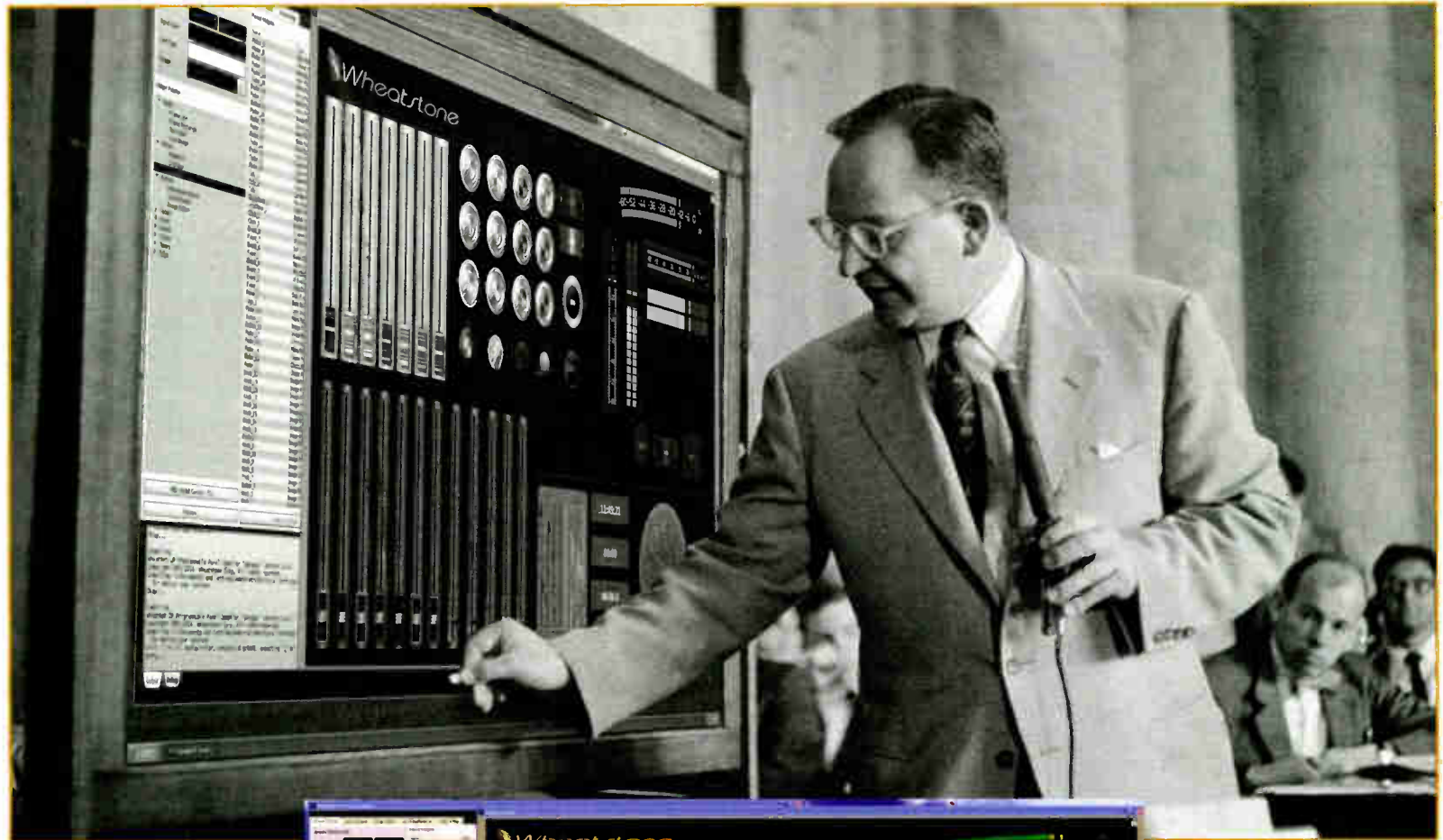
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Mixed Reviews for Wheeler's AM Plans

Broadcasters disappointed about his expressed reluctance on FM translators

BY LESLIE STIMSON

After months of industry speculation about efforts to help AM station owners, FCC Chairman Tom Wheeler said he intends to release a "revitalization" report and order. He said it will give AM owners more flexibility in siting towers, complying with local zoning requirements, obtaining power increases and incorporating energy-efficient technologies. He said the FCC would

2003, from 3,800 to 6,300, and that the 2003 figure would likely be more than doubled as more translator CPs are built out. Wheeler questioned whether there's enough to go around for AMs, too.

"Nearly 4,000 translators have changed hands since the 2009 order that made them available to AM stations for the first time, including over 600 sales to AM stations," he wrote. He asked why AMs need a special window, and also whether government should

to AMs since 2009. However, he said, AMs seek a special window because many translators are not in locations that can benefit them; translators would have to be moved closer to AM stations than now allowed in one hop.

Fletcher Heald & Hildreth attorney Harry Cole agreed. He blogged that "the raw number of FM translators currently authorized is irrelevant to the survival of AM stations if those translators don't happen to be located in areas where AM stations can take advantage of them."

Cole said the ability to move a translator to a place where it can be used by an AM licensee "is narrowly circum-



From left: Ben Downs, Ben Dawson, Greg Borgen, Andy Skotdal and Glynn Walden debate the chairman's stance on AM revitalization and the pros and cons of going all-digital.

"adopt specific measures to address practical problems and interference-related issues that have long plagued AM stations."

He made the announcement during the week of the NAB Show in April.

However, the chairman believes other proposals need further study, and plans to release a further notice. This would invite comment on some sort of expansion of day/night service for AMs that serve small markets while protecting the core service areas of Class A. Bryan Broadcasting Vice President/General Manager Ben Downs afterwards said he interpreted this as a roll-back of skywave protection.

The chairman also wants to explore expanded band options; he believes there's room for additional stations at 1606 to 1705 kHz, whether stations migrating from the standard band, new stations or all-digital signals.

But Wheeler questioned a proposal that AM owners wanted most and that drew no opposition in public comments submitted to the commission: the opportunity for AM owners to take part in a special window to apply for FM translators.

He said that the number of FM translators has increased 65 percent since

favor a given class of licensees "just because the company owns a license in the AM band." He said he's committed to improving operations of existing licensees as well as new entrants.

He did not explicitly mention low-power FM; but many AM experts with whom Radio World spoke say LPFMs fear that a window would allow AMs to use up available spectrum for translators, limiting growth opportunities for their service.

In a keynote to NAB Show attendees later that week, Wheeler commented further on his translator position; he said he intends to address how FM translators can be used to benefit "not just some licensees, but all licensees, including new licensees." NAB President/CEO Gordon Smith told reporters afterwards he needs to learn more about the chairman's FM translator concerns.

Attorneys commenting to Radio World were puzzled by the FM translator stance. Womble Carlyle attorney and RW contributor John Garziglia said that a translator window would simply allow AM owners a chance to participate in an auction; nobody, he said, would be "given anything."

He agreed with Wheeler that more than 600 FM translators have been sold

scribed" and that a new application window won't help AMs much "unless the constraints on such moves are significantly loosened."

The chairman didn't specify when his AM decisions would be released, estimating it would happen in "coming weeks."

Commissioner Ajit Pai, who has been pushing for AM revitalization within the agency since 2013, hopes the chairman will move on the AM proposals "in the next couple of months."

DISAPPOINTED

Broadcasters on a Broadcast Engineering Conference panel about AM radio were less than thrilled with the chairman's remarks, especially with Wheeler's hesitation on translators.

"It's not the news I wanted to hear," said moderator Ben Downs, vice president and general manager of Bryan Broadcasting. AMs should be allowed broader access to translators because of rising noise levels, he said. "The argument I would make is Part 15. We didn't make AM unlivable, the iPhones did that, and laptop computer screens and florescent lights."

If the FCC was unwilling to enforce

(continued on page 5)

Scenes From the Show



During the SBE Ennes Workshop, Wayne Pecena, second from left, was persuaded to pause in teaching fundamentals of IP long enough to accept a plaque as Radio World's Excellence in Engineering Award recipient for the past year. From left: SBE Executive Director John Poray; recipient Wayne Pecena; SBE President Joe Snelson; NAB EVP/Chief Technology Officer Sam Matheny; SBE Ennes Foundation Trustee Fred Baumgartner; and Radio World Editor in Chief Paul McLane.

FROM THE EDITOR

BY PAUL McLANE

Throughout this issue, we share snapshots from this year's NAB Show. Our photographs give an overview of the experience on the show floor and in various workshops and addresses.

On Saturday of the convention, I visited the SBE Ennes Workshop to present Wayne Pecena with his Radio World Excellence in Engineering Award,

which we announced last winter.

Recipients represent the highest ideals of the U.S. radio broadcast engineering profession and reflect

those ideals through contributions to the industry.

As I noted in an earlier profile, Pecena is director of engineering at Educational Broadcast Services in the Office of Information Technology at Texas A&M University, which operates KAMU(TV) and KAMU(FM). A primary reason for honoring him was his commitment to lifelong professional education; so it was appropriate that I found Pecena lecturing a room jam-packed with engineers furiously taking notes about his networking material. One participant told me later that his content was "remarkable, really college-level."

My thanks to the society leadership for allowing me to surprise Wayne that morning, and to NAB's Sam Matheny for making time to join us.

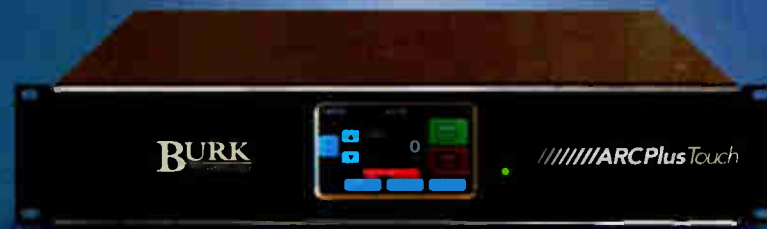
Separately, our publisher John Casey and I want to thank our industry friends who came out for a Tuesday breakfast to remember Radio World's colleague, the late Dale Tucker, who died last September at age 73. Dale spent 17 years as a regional sales manager for Radio World when it was owned by IMAS Publishing, working for founder Steve Dana; and he was often seen at conventions in the company of his sales colleagues Skip Tash or John Casey. He also helped launch sister publication Pro Audio Review. You can read my earlier blog post about Dale's life and career at <http://tinyurl.com/rwdale>.

"Kudos to everyone for making it there on such a busy week to honor a soul who shaped Radio World and was so much a part of our lives," John Casey said.

In the next few issues, we'll cover more show themes; we'll introduce you to recipients of our Best of Show Awards; and we'll report on numerous other hardware introductions in our Summer of Products issues.

And if you can't wait that long, check out our new post-show NAB Post-Sees & Debriefing webinar on May 20. It's free, and this year we focus *strictly* on new products. Register at <http://radioworld.com/webinars/13>.

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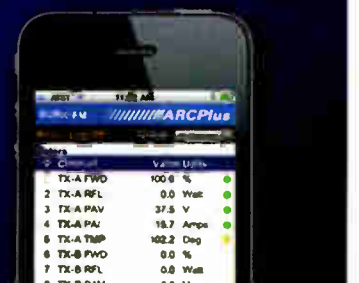
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THIS ISSUE

MAY 6, 2015

NEWS

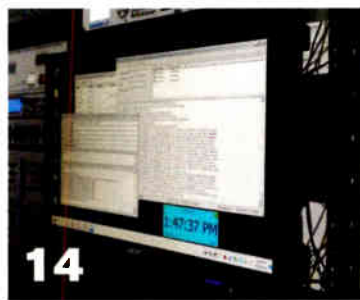
"Get Comfortable With Disruptive Ideas"	1
Mixed Reviews for Wheeler's AM Plans	3
Scenes From the Show	4
Voltair Creates Drama	6
News Roundup	13



Photo by Bob Kovacs

NAB SHOW IN PHOTOS

..... 12, 19-20, 28-29

**FEATURES**

Mount a Flat-Screen Monitor to a Rack	14
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BUYER'S GUIDE

What's In Your Studio?	22
Tech Updates	23-25

**OPINION**

Reader's Forum	30
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AM ISSUES*(continued from page 3)*

the excess RF emitted from Part 15 devices, "I think it's incumbent on the FCC to fix it," Downs said.

"It creates a real problem for us," said Greg Borgen, owner of WDGY(AM) in St. Paul, Minn. "We were hoping we'd get some translators; now this shoots this down." Prices for FM translators have shot up into the hundreds of thousands of dollars, becoming harder for AM owners to afford. "The cost is unbelievable for something that you have no assurance that you will be able to use."

Downs favors moving small- and medium-market AMs to FM translators. After a year, if the new signals are not causing interference, he thinks they should be granted authorization and the owners would turn in their original AM licenses, to clear out spectrum for larger stations.

CBS Radio SVP Engineering Glynn Walden said the commission should support most of the proposals that were in the FCC's AM revitalization proceeding. But he said the proposals on which the commission received public comment "really helped a limited few and nibble at the edge of the problem. The AM transmission system is difficult to buy and maintain."

He said FCC practices have favored quantity over quality, which has led to sub-optimal signal coverage in many cases.

ALL-DIGITAL DISCUSSIONS CONTINUE

Reaction to the Wheeler announcement also crossed over into discussions of whether radio is ready for all-digital transmission on the AM band.

Andy Skotdal, owner of S-R Broadcasting, reacted to the news by saying, "It's this kind of limp response that makes me wonder whether AM all-digital is ever going to happen." But Skotdal did agree with Wheeler that the commission should allow broader use of power-saving technologies like the Modulation-Dependent Carrier Level transmission algorithm. He said he's "saving \$4,000 a month" with MDCL.

The question of a possible all-digital future for AM remains a hot one.

Skotdal's two duplexed AMs in the Seattle metro were two of nine stations on which NAB Labs conducted field tests for all-digital HD Radio transmission and reception on the band. He liked what he heard, though he noted dropouts. "Unless your transmitter site is in the middle of the metro, the signal can't overcome buildings."

And he remains skeptical of any near-term move to all-digital authorizations. "When you see the FCC move in miniscule steps, and often the wrong steps, I don't see how you can get any

NEWS**DIGITAL DRIVE TESTS COMPLETE**

NAB Labs has been conducting field tests, lab tests and allocation studies related to all-digital AM HD Radio transmission and reception.

The goal is to understand the effect that all-digital AM transmission may have on the FCC's current rules, according to NAB Senior Director of Advanced Engineering David Layer, should the industry decide to ask the commission to authorize all-digital AM HD Radio transmission.

Field driving tests for nine stations are now complete.

The big takeaways are that coverage of the all-digital AM signal "greatly exceeds" the hybrid AM HD Radio signal, said Layer. The all-digital AM HD Radio signal is "significantly more robust" than hybrid digital AM, he said. It's also more immune to noise and interference than either analog or hybrid AM and can be received on existing HD Radio tuners.

But he said NAB Labs also learned that all-digital AM coverage is "highly dependent on co- and adjacent-channel interference" and that nighttime performance "is an issue" that needs to be investigated more thoroughly.

We've reported that if the FCC ever were to authorize all-digital AM transmission, it would probably do so first for daytime use only.

Co-channel interference lab testing should be wrapped up in a couple of months and Layer hopes to present those findings at the NAB Radio Show.

— Leslie Stimson

traction on this issue."

Commenting on a possible move to all-digital, WDGY's Greg Borgen said, "AM is all I know. Something has to start to move the ball forward."

There's no question the band will be all-digital someday, in the opinion of Hatfield & Dawson President Ben Dawson; but unanswered is which system would be used — whether iBiquity technology, or Digital Radio Mondiale, or even another system not yet in the marketplace.

But Dawson said some of his small-market clients are adamant that they will never pay a private company, meaning iBiquity, "for the privilege of going digital."

Walden of CBS Radio said DRM would have to be vetted as HD Radio was, which could take four to five years. He is former vice president of broadcast engineering for iBiquity Digital and holds several HD Radio patents.

Panelists discussed pros and cons of a hypothetical government receiver mandate to hasten market penetration of digital receivers and discussed how much penetration would be necessary before broadcasters would convert to all-digital signals, making analog-only receivers obsolete.

The "marketplace has responded weakly" to the hybrid digital transition, according to Dawson. He and Skotdal support a receiver mandate, including AM digital chipsets, similar to how television made its digital transition. Walden also supports a mandate but doubts it will happen due to NAB opposition.

Skotdal said he'd consider going all-digital once HD Radio receiver penetration hits about 70 percent; Walden doesn't believe radio owners would be willing to let go of the remaining 30

percent of their audience.

They also debated whether a radio migration to television analog Channels 5 and 6 would be feasible, considering the upcoming television spectrum auction and subsequent repack. Skotdal believes there would be room for radio and that this might be a better long-term solution than all-digital on AM because of the rising noise floor on the band. Downs doubts radio would be allowed allocations on analog Channels 5 and 6 "without a fight."

On this panel, a majority of speakers agreed there should be fewer AM stations on the analog band to reduce noise. But it is a provocative and controversial idea for AM owners. Skotdal had posed this suggestion in a commentary in Radio World earlier this year, and said he subsequently was threatened by a small-market broadcaster about it.

Should the industry decide to seek FCC authorization for all-digital on the band, Skotdal says there are a laundry list of things to consider first, including standards for all-digital allocations, interference and an HD carrier mask. He also mentioned controlling conversion costs, increasing receiver penetration, creating licensee incentives, developing affordable field testing gear and setting digital sunrise and analog sunset dates.

Several panelists repeated a theme of recent years: that time is running out for AM. "There are some days I fear that we can see our shelf life," said Downs.

Walden said, "I love AM radio. I want to see it get better and survive. ... Analog is an historical artifact that we need help to move on from our regulators."

Dawson added, "I don't think analog [AM] will ever go away, but in large, industrialized countries its practical use is slowly fading."

Voltair Creates Drama

Telos' 25-Seven Systems debuts PPM processor/monitor

BY LESLIE STIMSON

A processor/monitor that debuted at the show generated lots of conversation among broadcasters and programmers who use Nielsen Portable People Meter ratings.

As we reported in the March 25 issue, the Voltair is made by 25-Seven Systems, part of the Telos Alliance. Its debut fanned the ambivalence that some programmers feel about the accuracy of the PPM encoding and monitoring process.

Nielsen acquired Arbitron in 2013 and as part of that, acquired that PPM ratings measurement technology. Some programmers and engineers believe that stations airing "soft" formats, like classical music or talk, don't encode as well in the PPM process as "loud" formats, like rock, do, and that programmers further can "game" the system by adopting certain programming tricks with their audio.

HIGH STAKES

Some of the programmers who doubt the validity of the encoding process believe placing Voltair in their processing chain will ensure that station ratings are more accurate, while other observers who spoke to Radio World on condition of anonymity deem the product a "black box" that could potentially do the opposite.

Telos said it has sold more than 300 of the units at a list price of \$15,000 and

that the device is on the air in every PPM market in the United States. Some programmers believe that if a processor can help produce even small improvements in ratings performance, it could mean significant difference in revenue, especially for stations in the largest markets.

Attention to the product drew the notice of Nielsen. The research firm has not commented to Radio World or other

tially, the statement indicated that Telos and Nielsen have been talking for several months to see if they can come to a "win-win path for all of the relevant stakeholders" and that "Telos is working with Nielsen to support their efforts to test the effect of Voltair on audience measurement." According to Telos, Nielsen has had a Voltair unit to test since January.

In a separate note to clients, Nielsen

Promotional cards at the show publicized Blesser's session and stated, "It's not about flaws in the system. Voltair simply helps you get the listening credit you deserve." These cards subsequently were pulled from the booth, according to 25-Seven Systems VP and Founder Geoff Steadman, who said Nielsen "asked us to tone it down."

LOTS OF GUESSING

Some broadcasters speculated to Radio World that Nielsen could resolve the situation by buying the technology from Telos; but when asked whether such an offer had been made, Steadman said, "No one's made us an offer that I know about."

A broadcast source close to the former Arbitron said that Nielsen is probably trying to determine in its testing whether the Voltair amounts to "gaming" its ratings system. Broadcasters have tried various "home-brewed" methods to do that over the years, but if caught, the research firm can "de-list" your station from the local ratings. "And then good luck getting your money back" for the balance of the contract, he said.

Before the show, Nielsen told attendees at an SBE meeting in Columbia, Md., that it has developed an updated PPM encoder and confidence monitor. Its new encoders are in use at some 300 stations, we've reported; Nielsen hasn't released its new monitors to stations as yet. It's unclear if the updated versions address what some perceive to be system shortcomings.

Numerous observers summed up the situation this way: "It's about to get uglier" because now lawyers are involved.

Telos said the device is on the air in every PPM market in the United States.

press on the Voltair, but tension between Nielsen and Telos was evident before the conference and during two Broadcast Engineering Conference panels.

Nielsen distributed a note to clients stating that it "does not recommend that clients use the Voltair" until its testing and validation are complete. Telos Alliance CEO Frank Foti responded with a client memo titled "Nielsen Schmielsen!"

Cornelius Gould, senior algorithm developer for the Telos Alliance, and Dr. Barry Blesser, director of engineering for 25-Seven Systems, both said Nielsen asked them to read a statement at the start of their NAB presentations. Essen-

said it will update clients when its testing is complete.

Gould was careful to use the term "watermarking" rather than PPM or Portable People Meter during his presentation. Blesser noted that "PPM, which is a registered trademark of watermark encoding, belongs to a larger class of watermark encoding," and he wasn't just discussing one system.

After the Gould session, a Nielsen representative who attended twice told Radio World that he couldn't comment on the issue. A third attempt to contact the company for a comment was not answered.

RADIO TRENDS

(continued from page 1)

AM's future on page 3. More topics, including HD Radio, NextRadio, FM chips and the connected car, will be covered in the next issue.

MATHENY: ENGINEERS MATTER MORE THAN EVER

Broadcasting is at a crossroads and must be guided by change, choice and principles, according to NAB Executive Vice President/Chief Technology Officer Sam Matheny.

"Most of the challenges our industry faces are driven by new technologies. This means the role of the broadcast engineer is more important than ever," he told attendees in his first Broadcast Engineering Conference keynote. "We must get comfortable with disruptive ideas."

"It used to be when a broadcast engineer was asked about 'IOT,' he would most likely answer with something about the way inductive output tubes impact the RF amplification; a discussion of klystrons and efficiency gains would soon ensue," Matheny said.

"But today, if asked about IOT, that same engineer may just as likely — perhaps even more likely — start talking about the 'Internet Of Things' and a TV every-



"We can choose to sit idle, or choose" to act, said NAB EVP/CTO Sam Matheny in his first Broadcast Engineering Conference keynote.

where or streaming radio strategy."

IP connectivity is expanding, and today's radio and TV engineers must understand that the merger of IT and engineering functions is something "we all must effectively manage."

"There are no facts about the future. It is ours to create. We can choose to sit idle, or choose" to act, he said. Connectivity will increase; data costs will come down; consumers will be more demanding; and data will be more important, he said.

WHEELER: PIRATE ENFORCEMENT WON'T SLACKEN

Chairman Tom Wheeler said an FCC plan to close to close two-thirds of Enforcement Bureau field offices and cut the number of field agents by half does not mean the commission is backing away from its responsibilities in interference protection.

The proposal would leave the agency with eight field offices and 33 field agents. But pirate enforcement won't diminish, according to Wheeler, who acknowledged broadcasters' apprehension over the closure plan.

NAB and the agency are in talks about the proposal. "We want to work with you," he told broadcasters at the convention.

Before the show, NAB VP Spectrum Policy Bob Weller — who began his career as a radio inspector in the FCC's San Francisco field office — blogged that the agency should reverse course.

Wheeler, without getting into specifics, pledged to put more field agents on the ground in Miami and New

(continued on page 8)

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RADIO TRENDS*(continued from page 6)*

York, both hotbeds of pirate activity; and he reiterated what Enforcement Bureau Chief Travis LeBlanc said: Every agent will be an electrical engineer.

"This is a situation of new realities demanding a reassessment of how we do business," Wheeler said. Keeping all field offices open costs some \$10 million a year, two to four times the cost of operations under the more centralized plan. He called overhead costs "ridiculously high."

On the day he spoke, the FCC fined a New York pirate \$20,000.

In response to a question from Radio World after the speech, NAB President/CEO Gordon Smith took a pragmatic approach. He said he understands broadcasters have concerns over how the commission handles enforcement, but believes the agency should be given an opportunity to demonstrate how it can work more effectively.

"It's not a hill that the NAB is going to" climb, Smith said. If the chairman "thinks this is a more reasonable approach," he's fine with it. "I just care about the result."

Some members of Congress, meanwhile, are taking a closer look.

Democratic House Commerce Committee staffer Margaret McCarthy participated in a panel moderated by former Commissioner Robert McDowell. She said the FCC's "budget has been essentially flatlined" and that it's trying to do more with less. "Our Democratic members have said we can't really punish the agency" when Congress isn't providing more resources.

However, GOP members are paying close attention to the field closure plan. "We care a lot about what's going on in the field," said House Commerce Committee Republican staffer Dave Redl. He said that House Telecommunications and Technology Subcommittee Chairman Rep. Greg Walden (R-Ore.), a former radio station owner, "has said the FCC should focus on its core mission — to prevent interference."

In late April, four GOP House lawmakers said they were giving the FCC until May 7 to turn over material related to the proposal. They are Walden, Committee Chair Fred Upton (R-Mich.), Oversight and Investigations Subcommittee Chairman Tim Murphy (R-Pa.) and

Rep. Mike Pompeo (R-Kan.) They asked for all material related to the closure plan and told the FCC that the proposal to reduce its geographic footprint "appears to ignore the impact this might have on the commission's public interest goal."

In a subsequent letter, Walden and Ander Crenshaw, (R-Fla.) chair of the Financial Services and General Government Appropriations Subcommittee, asked for material related to how the "Tiger Teams" would be able to respond to interference concerns within 24 hours and what regions in the country experience the highest interference rates.



Enforcement Bureau Chief Travis LeBlanc is interviewed by predecessor David Solomon.

LEBLANC: FIELD OFFICE STRUCTURE OLD, COSTLY

New Enforcement Bureau Chief Travis LeBlanc says the office closure plan reflects an effort to modernize the bureau and use its increasingly scarce resources wisely.

The structure of the field offices is 20 years old, too costly and not effectively focused on the commission's current or future needs, he and Wheeler believe.

"We're beginning to think about where we need to direct our scarce resources to reach the maximum impact," he said. This means "doing less of some work and more of other work." LeBlanc was interviewed by moderator David Solomon, himself a former Enforcement Bureau chief and now a partner at Wilkinson Barker Knauer.

LeBlanc said that when he arrived at the bureau a year ago, morale in the field was low and no one was being replaced in the field offices because of the agency's "flatlined budget." He said that "over 50 percent" of the 63 field agents are eligible for retirement.

Under the proposal, broadcasters — now accustomed to working with regional field offices — would communicate instead to an FCC person in Washington. That position would oversee the field directors and parcel out the work, and it would be a full-time position, not one duty among several

handled by a deputy chief as is the case now, according to LeBlanc.

He said that the agency will continue to "assess if we need to restructure" the plan as it gets implemented. "That's certainly on the table." He said the bureau is "actively engaged with NAB" on this proposal.

Paul Tinkle is president of radio group Thunderbolt Broadcasting; its stations serve small markets in western Tennessee and Kentucky. He asked LeBlanc to reconsider. He envisioned broadcasters having to call Washington to complain about competing stations drifting off-

frequency or exceeding licensed power.

In smaller markets, Tinkle said, field offices are the face of the commission. "When that FCC inspector comes in, he's really the voice of God."

He also pressed LeBlanc to give field agents new measurement tools. LeBlanc assured him part of the proposal is to modernize equipment.

NO PIRATES IS THE GOAL

The agency plans to change its approach to pirate radio, according to LeBlanc.

Broadcasters are worried that interference from pirates will become rampant in the wake of the FCC cutbacks; some told Radio World the commission seems to be backing away from spectrum enforcement, reacting to the proposal with words like "unconscionable" and "it sickens me."

LeBlanc likened fighting pirates to playing Whac-A-Mole; the agency gets a pirate off the air only to see it turn up again six months later.

"We need to think about, when we take action, that [the pirate] is actually off the air and things to prevent pirates ever getting on the air. We want to get to a world where there are no pirates on the airwaves," said LeBlanc. He said he'll work with NAB and broadcasters on "policy options that remove incentives" for pirates.

O'RIELLY FLOATS ANTI-PIRATE SCHEME

FCC Commissioner Michael O'Rielly acknowledged that the agency's enforcement resources are stretched. "We need to consider other ways to remove the scourge that is pirate radio."

The GOP commissioner discussed his ideas during the show, saying that pirate radio "causes unacceptable economic harm to legitimate and licensed American broadcasters by stealing listeners."

He cited a legal approach that's been used to combat email spam, saying it may work for broadcasters too. The "CAN-SPAM Act of 2003" essentially authorizes Internet service providers to seek out "bad actors" for a host of illegal activity and recoup their losses. (The acronym stands for "Controlling the Assault of Non-Solicited Pornography and Marketing.")

"If we can narrowly permit a limited and targeted private right of action here, to be used only by broadcasters, it could provide a valuable tool to tackle a persistent problem in some radio markets."

This framework serves as a good model to provide more options outside of the FCC process for deterring and eliminating pirate radio, according to O'Rielly.

Such a rule change may need congressional approval, and he emphasized that he's not suggesting consumers be allowed to file lawsuits against pirate stations.

O'Rielly says his proposal is not related to the agency plan to reduce its field offices; he has not taken a position on that issue.

Queried by Radio World about the commissioner's comments proposal, several broadcast engineers expressed concern about their stations going after pirates directly, noting that illegal operators often set up their gear in bad neighborhoods. "We're not the police. Nor are our attorneys," said one head of engineering of a radio group.

FEDS SEE BROADCAST ROLE IN NEXT-GEN EAS

Federal regulators emphasized that broadcasters definitely have a role to play in the future of EAS. Representatives of the FCC and FEMA also discussed how next-generation alerting could benefit alert originators, emergency managers and broadcasters; and they talked about the advantages of integrating IP-enabled technologies into the broadcast platform.

FCC Public Safety & Homeland Security Bureau Chief David Simpson said the federal vision for the future of emergency alerting "will only enhance

(continued on page 10)

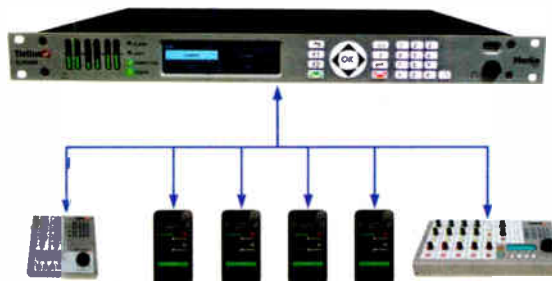
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RADIO TRENDS

(continued from page 8)

the role broadcasters will play. First responders get a lot of well-deserved credit, but broadcasters are first informers."

"We envision a public communications model in which EAS works hand-in-glove with other services," like 911, for example, said Simpson. Using meta-data, alerts can be geo-targeted, and devices can decide if they pertain to the user or not.

FEMA is dedicated to maintaining the public warning system, Assistant Administrator of the National Continuity Program Damon Penn said. Even though wireless alerts are now receiving a lot of press and attention, he reassured broadcasters that "we're committed to EAS."

FEMA is "looking to leverage HD Radio, hybrid radio and NextRadio" and even the FM chip in EAS, said Penn.

Yet the feds also are looking to broadcasters to tell them what they think broadcasting will look like 10 to even 30 years from now to plan for the future EAS.

FEMA has been prepping for another national EAS test. Asked about the status of a report and order regarding that test, Simpson said it's on the eighth floor of FCC headquarters for commissioners' review. Though he couldn't predict when

it would be complete, he looked forward to "being able to announce something soon."

PODCASTING COMES OF AGE

Is this the "golden age" of podcasting? Podcast One Founder/CEO Norm Pattiz asked that question of a panel at the Radio and Internet Newsletter Conference.

Andy Bowers, chief content officer for Slate/Panoply Media, said when he began podcasting, new vistas immediately opened. "Look at all the things you can do that you can't do on radio. There's no clock, and I can do it from my desk," said Bowers, a former NPR correspondent.

"We're making it up as we go along," said Bowers. "Podcasting is the way of the future."

Pattiz said one of the reasons he got into podcasting after 35 years in radio is that podcast listeners are PI listeners "and now you've got social media to promote to them."

Pattiz asked Tom Leykis how podcasting is different than radio. Leykis said that in radio "you spend 77 percent of your time chasing P2s and P3s, the people who don't love you." In contrast,



Photo by Leslie Stinson

Is this the "golden age of podcasting"? Podcast One Founder/CEO Norm Pattiz raised the question at the Radio and Internet Newsletter conference.

in podcasting, "the PI is everything," said Leykis.

"They pay your bills, show up at events and tweet about you," he continued. "When I worked at a station, the listeners found commercials to be an intrusion. In podcasting, the listener understands if they want their favorite programming, it's got to have advertising."

Podcasters are starting to become big players in the media ecosystem, said

Pattiz. "We sink or swim together."

Indeed, "Serial," the podcast about a 1999 murder in Baltimore, was the first podcast to win a George Foster Peabody Award, announced shortly after the convention.

Did you attend the NAB Show? What were your takeaways? Email radioworld@nbmedia.com with Letter to the Editor in the subject field.

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World Radio History

As the NAB Show opened, Chairman Tom Wheeler blogged: "In the coming weeks, I intend to conclude this open item with a Report and Order that will buttress AM broadcast service and ease regulatory burdens on AM broadcasters." But he questioned wider use of FM translators to serve AM licensees.



© NAB/Robb Cohen Photography



Photo by Robb Cohen

A crowd gathers outside the the Central Hall as the NAB Show exhibition prepares to open Monday morning. Next year, the Radio/Audio hall moves back to the North Hall.



Photo by Bob Kovacs

Steve Lee, left, of Netcast Studio and podcaster Dave Lee do a live Web feed from the floor of the North Hall.

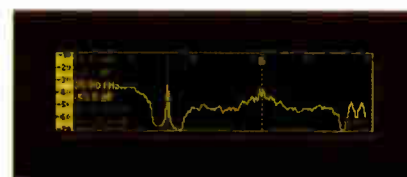


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Iconic entertainer Jerry Lewis received the NAB's Distinguished Service Award and thanked broadcasters for supporting his work to benefit the Muscular Dystrophy Association. "If it wasn't for you, a lot of kids would be suffering worse," he said. NAB President/CEO Gordon Smith looks on.

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NEWSROUNDUP

MUSIC: The NAB, several radio/audio organizations and other consumer/retail entities with an interest in music licensing are members of a coalition to "protect the music economy." It calls itself the "Music. Innovation. Consumers. Coalition" and wants policymakers "to ensure that upcoming decisions on copyright are grounded in rationality, affordability and predictability so that the music economy can continue to thrive and grow." The record-label-backed musicFirst Coalition deemed the group "a new bottle for the same old artist-stiffing wine."

The MIC Coalition described the next two years as pivotal, with decisions pending that have the potential to determine where and how music is played and what costs consumers and users will bear. Congress is considering more music royalty legislation; the Copyright Royalty Board has another webcasting rate-setting process; and the Department of Justice is reviewing music royalty consent decrees for ASCAP and BMI.

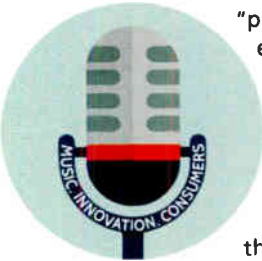
Radio/audio members include NPR, Pandora, iHeartMedia, Cox, EMF's K-LOVE network and Salem. The CEA and Digital Media Association are members, as are Amazon, Google, hotel, retail, restaurant and communications associations.

MUSIC II: At a House Judiciary Committee hearing in April, U.S. Register of Copyrights Maria Pallante called the Fair Play Fair Pay Act an "excellent legislative framework" that would enact reforms. She said the lack of an AM/FM performance right was "indefensible." Radio broadcasters say they pay licensing fees for copyrighted music and that this measure would force them to pay twice, putting struggling stations out of business. Pallante urged lawmakers to bring all forms of radio under a single rate standard, which the bill would do.

FRANKEN FM: So-called Franken FMs got a reprieve from the FCC. Commission rules don't explicitly forbid low-power television broadcasters from essentially operating as FM stations on 87.7 and 87.9 MHz, but the FCC has been reviewing that. Some radio operators claim they receive interference from LPTVs acting as FMs and that such stations

aren't operating the way the commission intended. The LPTVs say they are operating within the law. LPTVs and TV translators were supposed to end analog transmissions and transition to digital by Sept. 1. The Media Bureau suspended the deadline so that LPTVs and TV translators can skip paying to build digital facilities before they know if they're going to take part in the upcoming incentive auction and subsequent spectrum repack.

SCOTT MASON: CBS Radio Los Angeles announced that regional Director of Engineering Scott Mason, right, died April 19; he was 55. Mason had been in that position for 15 years, overseeing technical operations for 45 stations in the cluster. He joined KROQ(FM) as a weekend DJ and chief engineer in 1979. CBS Radio colleague and Radio World Technical Advisor Tom McGinley said, "Scott was tirelessly committed to his work and the company. ... Scott had struggled with various auto-immune and kidney issues for most of his life. But he was always a fighter and never complained or even talked about his health challenges." The company said a memorial service would be held in coming weeks.



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WORKBENCH

by John Bisset

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We often need to put a computer monitor in a rack; and usually we'll just plop it on a shelf.

Curt Yengst, CSRE, is engineer for Pillar of Fire's WAWZ(FM) in New

Jersey. He wanted to mount a flat-screen monitor more securely in a rack in his Technical Operations Center. He took step-by-step pictures to show the simple process.

If your LCD monitor has VESA standard mounting holes in the back, it can be mounted on a standard 19-inch rack panel easily. For adequate support, use a blank panel three rack units high

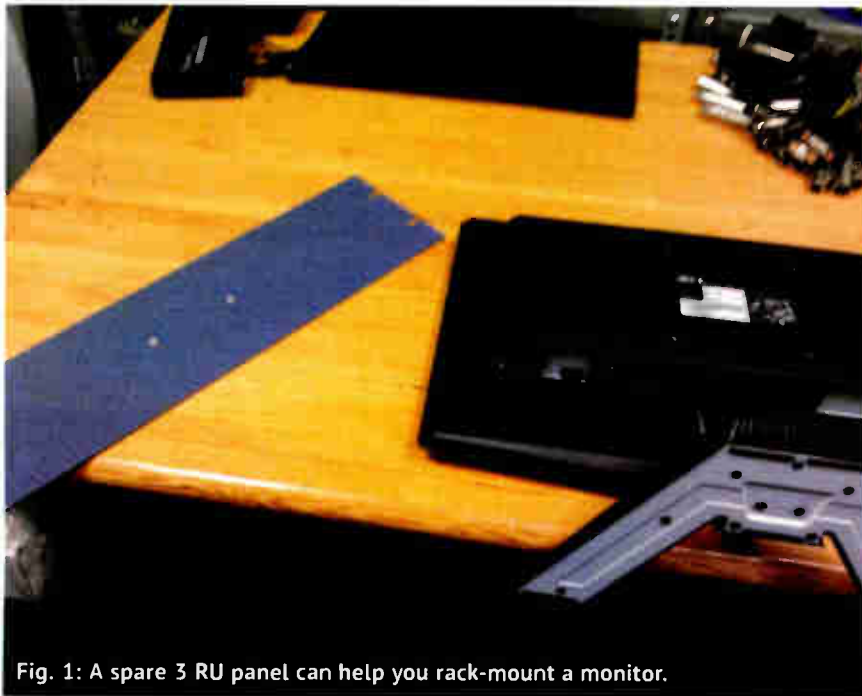


Fig. 1: A spare 3 RU panel can help you rack-mount a monitor.



Fig. 2: Center the panel to the monitor and mark the four mounting holes ...



Fig. 3: ... and mount the panel to the monitor.

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(3 RU), centering the monitor mounting holes on the panel, as seen in Fig. 2. Then drill holes to match those on the back of the screen.

Curt adds a helpful hint: To create a template for drilling the holes, draw a square exactly 10 x 10 cm and drill the holes at the corners.

Once the holes are drilled, select the appropriate machine screws to mount the panel to the back of the screen mount, as in Fig. 3. Finish by screwing the screen/panel assembly into the rack. Utilizing the monitor's VESA mounting holes, this monitor isn't going anywhere!

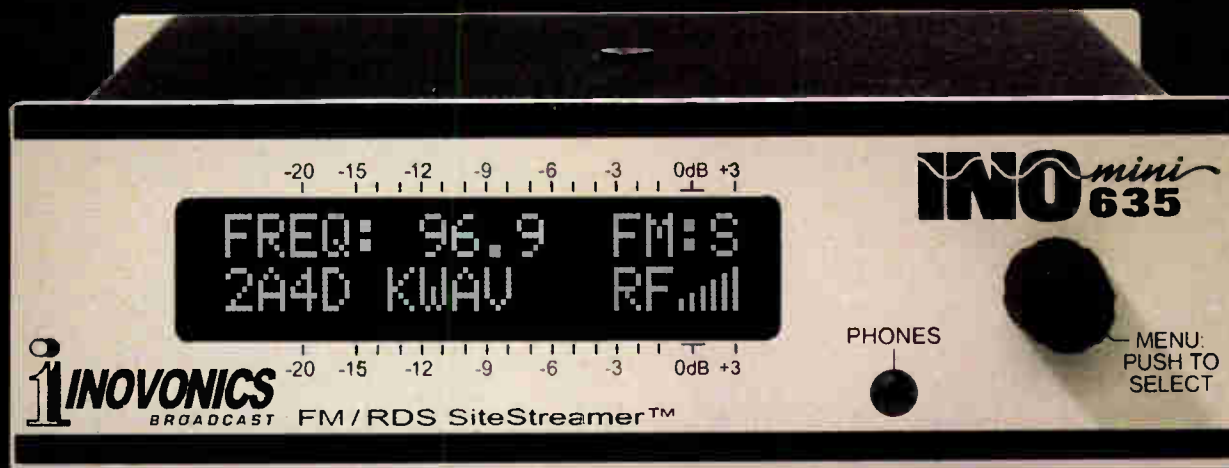
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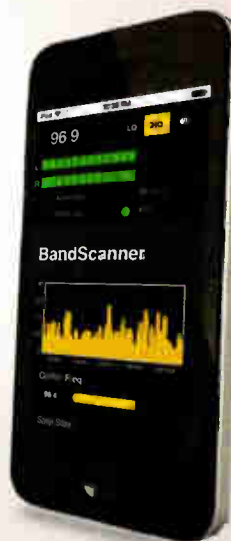


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- ▶ Optional rack mount accessory can mount 1-3 INOmini's in a 1U space (shown below)



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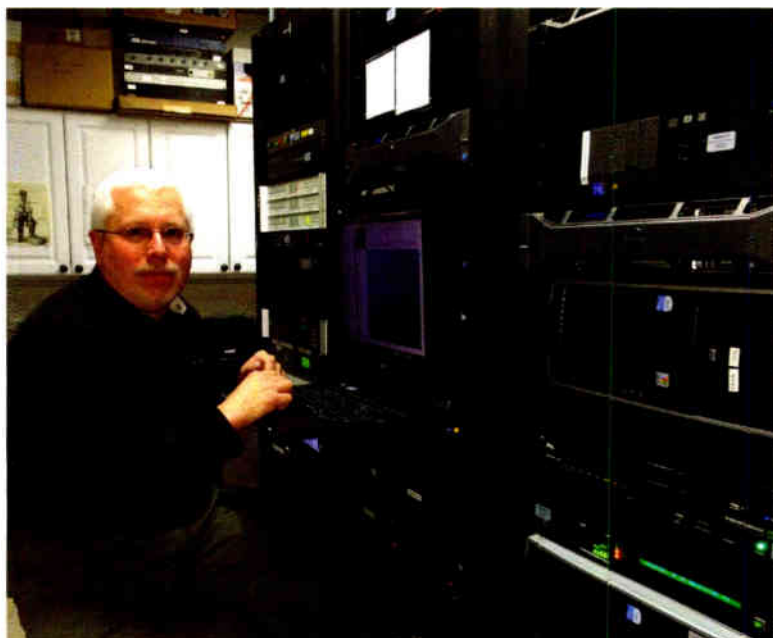
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Cris Alexander On Technology Disconnect

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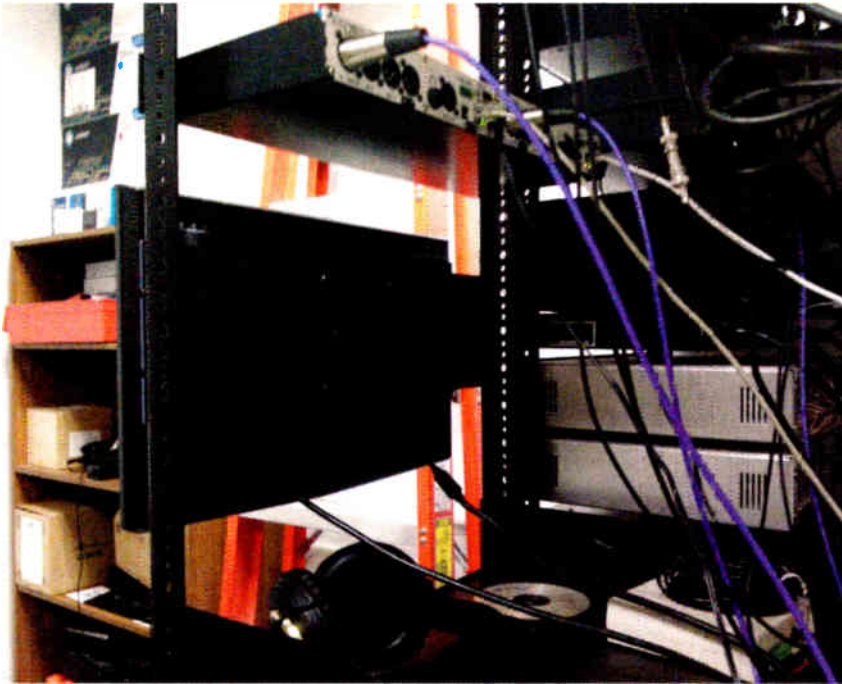


Fig. 4: Here's a rear view of the panel supporting the monitor.

WORKBENCH

(continued from page 14)

Figs. 4 and 5 show the completed mount. A simple project, and the finished product makes the effort worthwhile.

Greg Muir of Wolfram Engineering reports that Manuals Plus, a division of Ridge Equipment Co., plans to close its doors in June.

For years, the Maryland-based company has been one of the largest dealers of manuals for legacy test equipment and other electronic gear in the United States. But Greg received an email recently announcing the planned clos-

ing. It encouraged customers to make an offer on any manuals needed.

Greg sent an email requesting a bunch of manuals for his Dranetz AC line analyzer and associated plug-ins, knowing that the normal cost of these publications would exceed a couple of hundred dollars; the company replied with an offer of \$50 for the bunch.

A company representative told him that changes in documentation distribution, such as PDFs and numerous offerings on eBay, have really put a crimp in sales. At this writing, it appears that no one has offered to acquire the division, so the inventory most likely will go into a dumpster.

Greg and I share a dislike in using



Fig. 5: The finished mount.

PDF'd manuals when trying to work on a piece of equipment. By the time you jump from page to page of a multi-part schematic, you have forgotten where you are going or what you are trying to do. Greg dislikes having to print everything out and end up with a "microprint" schematic of an original D-size print.

If Workbench readers need test equipment manuals, now is the time to act. It's worth checking out the site via the search window at www.manualsplus.com to see if they have what you need.

Changes in documentation distribution, such as PDFs and numerous offerings on eBay, have really put a crimp in sales.

Becky Lawrence is the contact at Manuals Plus; her email is sales@manualsplus.com.

Engineering consultant Tom Osenkowsky sent a note regarding the high dummy load VSWR we discussed in the April 8 column. He reminds us that the reflected power meter is not bandwidth restricted, so the meter will show returns on it other than just the carrier frequency. Ditto for modulation monitors!

Contribute to Workbench. You'll help your fellow engineers and qualify for SBE recertification credit. Send Workbench tips to johnpbisset@gmail.com. Fax to (603) 472-4944.

Author John Bisset has spent 45 years in the broadcasting industry and is still learning. He handles West Coast sales for the Telos Alliance. He is SBE certified and a past recipient of the SBE's Educator of the Year Award.



ACCURATE 24:7

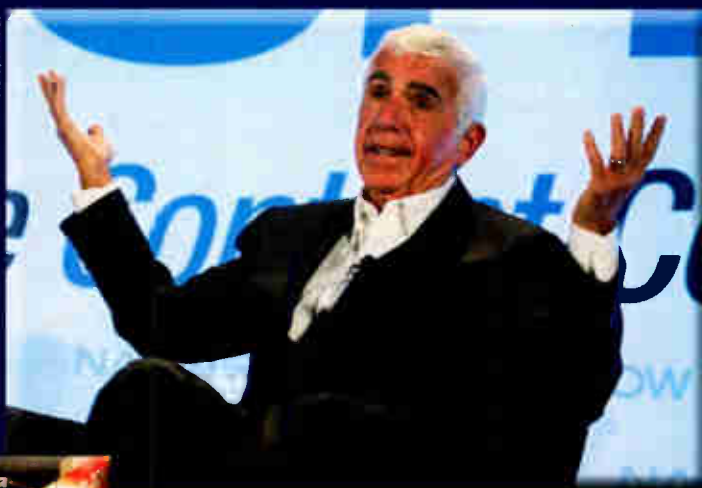
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Photo by Jim Peck



Vicky Kaseorg is author of "The Tower Builder," a book about WBT(AM)'s distinctive Blaw-Knox towers and their rebuilding after Hurricane Hugo, headed up by Tony Fonseca of Turris Engineering. They are shown at the NAB Bookstore.



Photo by Jim Peck

Mel Karmazin, former head of SiriusXM, CBS and Viacom, made an appearance. "The ultimate connected car is going to be a whole lot better than today," he said, according to a transcription published by Jacobs Media. "And on the dashboard, you're going to be able to get your local radio station. You're going to be able to get your IP delivered. And you're going to be able to get satellite. It's all the same. The audience doesn't think about it any differently. There's nobody that's going to sit back and say, 'Oh, I love my local radio. I'm not even going to try listening to satellite radio.' 'Oh, my god ... Pandora is a streaming service - it's not really radio.' I think that's garbage. I think it is all competitive companies in the audio space."

"If I could put time in a bottle ..." Richardson Electronics captures both the nixie tube display zeitgeist and repurposing a transmitter tube that probably had emitted its last.



Photo by Jim Peck

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IN PHOTOS

Dennis Heymans, Paul Sidow and Bea Porta represented Myat and its family of RF filters, rigid RF line components and RF systems.



Photo by Jim Peck



© NAB/Robb Cohen Photography

Bob Pittman, right, the chairman/CEO of iHeartMedia, chats with Michael E. Kassan of MediaLink at the Media Finance and Investor Conference. Pittman's company has launched a programmatic and automated ad buying platform for its 850+ stations, and its national sales rep arm Katz Media Group will introduce a programmatic buying ad exchange for the industry. Tech company Jelli is providing the underlying technology for these ad exchanges.

Nicole Santiago of AudioScience holds a half-height ASI5744 PCIe audio card suitable for PCs with smaller form factors, as often used in control and production rooms.



Photo by Jim Peck

Com-Tech's visually distinctive "Tower of Power" is made of cascading RF sample sections. The colors are not merely decorative; they denote sub-functions, and the red knurled pieces are adjusters.



Photo by Jim Peck



© NAB/Robb Cohen Photography

Cybersecurity guru John McAfee shared a stage with a lot of zeros, ones and eyeballs, though he probably didn't need the dramatic backdrop to keep the big crowd's attention.



Photo by Jim Peck

Stephen Okpanach-Moses, director of engineering for Radio Nigeria, hears about the system architecture of the STX10 10 kW FM transmitter from Bob Demuth of Broadcast Electronics.



Photo by Jim Peck

Do you need to tape down cables during remotes? Tecneq Distributing showed the Gaff Gun, a way to make cables safe on carpet or flooring and keep the fire marshal happy. A set of four "tunnel" inserts for the underside accommodate multiple bundle sizes and various gaffer's tape widths.

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What's In Your Studio?

Radio World asks some of its writers what monitors they use at their facilities

FIRSTPERSON

This issue of Buyer's Guide lists new offerings in mics, headphones and monitors. Here, we asked several RW contributors about their faves in monitoring.

Dan Slentz, director of engineering and I.T., Fort Myers Broadcasting/Sun Broadcast Co.: "I was always a fan of JBL 4312s. Can't begin to say the

the JBL LSR308s which are self-powered biamped with 56 watts for highs and 56 watts for lows. I really like their sound and they actually an affordable solution at about \$500 a pair. They have their LSR305s, but a 5-inch 'woofer' (used loosely) just doesn't have enough punch. Alternately, if you don't want to use self-powered and still stay in this price range, JBL Control 5s come in at about \$320 a pair.

"If I go away from brand loyalty, I think I'd certainly consider Mackie. Alesis or even KRK for their low price. Genelec are always great, but they tend to break the bank in cost.

"As a former rock jock, I see things from the other side, where talent really needs to be immersed in the material they're playing, so I still put emphasis on the studio sound."

Curt Yengst, engineer, WAWZ(FM): "In our main studio we use a pair of JBL 4408As powered by a Crown D-75 amp. We've been using this combination for many years, and the DJs are very happy with it. I also have a pair of 4408As in my office. In the main production room, we use good old Yamaha NS-10s because, as the old saying goes, if it sounds good on NS-10s, it'll sound good anywhere! They are powered by an Alesis RA-100 amp.



At left, WAWZ's main studio with JBL 4408A monitors doing their duty. Below: Look at that Yamaha NS-10 in a production studio at WAWZ.

"In case you're interested, in my home studio I use a pair of Event 20/20s, powered by a Crown D-75. I was introduced to the Events back when I worked in a radio production studio in Minneapolis (ca. 1998-2003), and I loved them."



A golden oldie — JBL 4312, Dan's favorite monitors. This is at one of his current charges, WINK(FM).



number of radio studios those beauties (in looks and quality) were in — everywhere from KAZY 106.7 in Denver to 97.5 WONE in Akron/Cleveland. They sounded sweet! But alas, they're now found in the 'antiques section,' where you find them on eBay or the 4312As in Europe (at a pretty steep price). The 4312s always seemed to sound best with a Crown D-75 amp.

"I've always been a fan of JBLs, so I sometime use the Control series, and when I 'get crazy,' I go after the JBL LSR4328s (about \$1,600 a pair!) which is far above cheap, but when paired with their subwoofer (LSR310 at about \$400), really rock a studio! You can also get the LSR series in a 5.1 configuration (which has always been my prime set-up for TV master control rooms with a pro Denon 5.1 decoder)."

"My alternate (for self-powered) are

Aaron Read, I.T. and engineering director, Rhode Island Public Radio: "In Studio A, our main air studio, we have a pair of Genelec 1031A speakers. In Studio B, our mic booth/production studio, we have a single Genelec 1029A.

"I have a grant app out now to overhaul Studio B and that Genelec is slated to be replaced by a pair of Mackie HR824 Mark 2 monitor speakers. If I could get a second 1029A I probably would, but they're long since discontinued, and two new Genelecs would bust the budget. The reason we have Genelecs is because WBUR(FM) used to own WRNI(FM)/RIPR and built the original studios, and they had standardized on Genelecs back in the day. Great speakers but major \$\$\$!

"That grant app also includes several Fostex 6301Ns for cue speakers around the facility. I have their predecessor, the 6301, at some transmitter sites, and they're great. Compact yet rugged and can pump out a really loud volume to cut through the roaring transmitter fan noise."



At left, a Genelec 1031A speaker is mounted on a pole in Rhode Island Public Radio's main air studio. Top: A 1029A sits high on a shelf in Studio B production.



TECHUPDATE

ELECTRO-VOICE RE SERIES CONTINUES TRADITION

With the recent addition of the RE320 microphone, Electro-Voice says it has broadened its portfolio of RE-grade broadcast studio microphones, offering more flavors for various tastes.

This well-known product group uses EV's Variable-D proximity control technology, which linearizes near-field tonal content, enabling the talent to move around the mic without proximity effect tonal shifts that EV says are common to other direc-

tional mics.

With a "vivid sonic sheen and luster," the RE320 promises exceptionally wide frequency response, with robust LF response and open transient detail, according to the company. Adding to its versatility is a two-position filter switch, where each switch position delivers its own distinct sonic flavor, driven by its high-output neodymium capsule.

The RE320's siblings deliver their own unique flavors. The RE20's sonic character is described as



intimate, warm and controlled. For personalities requiring crispness, articulation and flexible filtering, the RE27N/D promises a sonic sampler plate by way of a neodymium capsule and three separate voicing switches. Users can warm up the mic via its switchable LPF, as well as tailoring brightness via two separate HPF contouring switches. Price (RE320): \$423.50.

For information, contact Electro-Voice in Minnesota at (952) 884-4051 or visit www.electrovoice.com.

Michael LeClair, chief engineer/manager of broadcast systems, WBUR(FM): "Over the years we have been moving away from separate amplifier and speaker combinations to self-powered monitors. I prefer to use at least biamplified models whenever possible because they produce much more accurate sound. In our smaller control rooms it can be tricky to fit in a pair of nice monitors but we have had very good results with speakers like the Genelec 8030A (now the 8030B) with dual 40 W amplifiers. These will deliver a surprising number of SPLs into a small- to medium-sized control room but can be tucked into small spaces to either side of the mixing console and used as closefield monitors.



A pair of Genelec 8030s at home in a small mixing studio.

"For larger rooms we still rely on our older Genelec 1031As that have been going strong for many years. These are two-way speakers with an 8-inch bass driver and dual 200 W amplifiers. They are rated to produce 120 dB SPL at 1 meter — much louder than anyone should ever really use in monitoring. I look for at least an 8-inch bass driver for a larger control room because otherwise it can be hard to hear bass accurately. For those with a serious budget consider going up to 10-inch bass drivers and three-way speakers. An alternative to Genelec that offers similar sound quality for somewhat less list price is something like the Adam A7X.

"We have a number of the Fostex 6301 15 W self-powered speakers. I think the Fostexes are really just about perfect in terms of size, price and convenience for smaller speakers. We use them for cue speakers, talkback, intercoms, editing rooms and even small remote PA speakers where we only want just enough to allow spectators to hear the broadcast. These speakers are very durable and have survived all manner of abuses and road trips.

Finally, at the transmitter site a good rack-mounted monitor is a nice thing to have. Although expensive, the Wohler HRS-1S is a simple rackmount system that delivers better than expected fidelity and enough level to cut through most environmental noise at the transmitter site. For a bit more you can get models that include multiple channels of switching and metering if you need that but I have been happy with the basic amplifier model."

I could go on but I don't want to overdo it. Love speakers.

What do you use and why? Email bmoss@nbmedia.com.

DR-10X
Where The Action Is

Hit the streets with TASCAM's DR-10X, the portable recorder designed for ENG and interview recording. Attached to your mic, it records for over 8 hours on a single AAA battery. High-quality WAV audio is captured to a microSD card, and the entire system is simple to use in the field.

Learn how the DR-10X can simplify your remotes at tascam.com/product/dr-10x

TECHUPDATES**TASCAM SHIPS NEW CONDENSER MIC**

Tascam's TM-80 is a condenser microphone designed and priced for home recording and project studio duties.

The mic features an 18 mm aluminum diaphragm with a cardioid pickup pattern, useful on anything from vocals to acoustic instruments. Internal circuitry is optimized to reduce noise and distortion while retaining rich, full sound quality.

Included with the TM-80 are a tabletop stand, six-foot XLR cable and an elastic shock mount to reduce rumble and noise during recording. Priced less than many dynamic microphones, the TM-80 is a must-have for any size studio. Price: \$59.99.

For information, contact Tascam at tascam.com.

M-AUDIO OFFERS THREE-WAY M3 SERIES

The M-Audio M3-6 and M3-8 (shown) are three-way active speakers suitable for studio monitor use.

The M3-6 has a 1-inch silk dome tweeter/5-inch woven Kevlar midrange unit and a 6-inch woven Kevlar woofer. The M3-8 uses an 8-inch low-frequency driver. The company says Kevlar is an ideal driver diaphragm material, strong, stiff and light for a fast transient attack, excellent sensitivity and resistance to cone flexing and resonant breakup at high power levels.

The midrange and tweeter are mounted in line (the tweeter at the apex of the midrange) at the same point in space. M-Audio says this means the sound of the two drivers integrates without audibly-distracting time/arrival distortion of widely-spaced drive units. A concave integrated tweeter waveguide in front of the midrange cone focuses and directs the treble energy into the listening field, ensuring a stable sonic image for the recording engineer.

Three high-current Class A/B internal amplifiers (totalling 160 watts in the M3-6, 220 in the M3-8) provide power to each of the speaker elements. Three-band EQ shapes the sound to user needs; blue LEDs provide a visual aid for speaker placement.

The M3-6 retails for \$449; M3-8 is \$499.

For information, visit www.m-audio.com.

**AKG C214 AIMS FOR VALUE**

AKG says its C214 professional large-diaphragm condenser microphone has been designed as a cost-effective alternative to the high-end C414 family.

Like the C414, the C214 offers a 1-inch capsule on an integrated suspension to reduce mechanical noise. A switchable 20 dB pad allows recording of loud sources of up to 156 dB SPL. A switchable bass-cut filter allows close-up recording with almost no proximity effect.

The C214 captures sound by combining one capsule of the C414 dual-capsule system and AKG Back-Plate Technology; the company says this results in performance close to the C414 XLII. A double-mesh, all-metal grille protects the capsule and ensures RF immunity without affecting the microphone's acoustical performance. The C214 has a modern scratch-resistant finish and gold-plated XLR output. Price: \$399.

For information, contact AKG in California at (818) 920-3237 or visit www.akg.com/pro.

STEINBERG ADDS USB AUDIO INTERFACE

Steinberg's UR242 joins the UR44, UR22 and UR12 models of USB audio interfaces to offer various options for broadcasters on the go.

The company highlights their studio-grade converters, build quality, 24-bit/192 kHz USB 2.0 audio interface audio quality and class-compliant support for the iPad.

Front panel features on the UR242 include two Neutrik combo connectors, each fronting Class A D-PRE microphone preamps, peak LEDs, gain controls, dedicated pad buttons for signal attenuation and a headphones jack with its own volume level control and a master output volume control. The back comes with two TRS line inputs, two analog TRS line outputs, a USB 2.0 port, a power supply connector and a power switch.

A loopback capability offers users a simple means to stream performances live to the Internet, merging the incoming signals with the playback signal from Cubase AI DAW, available as a download to UR242 customers. The UR242, which offers latency-free monitoring, is compatible with other major recording software applications, supports the iPad in class-compliant mode and includes drivers for Windows and OS X systems. The unit includes dspMixFx editor application for Windows, OS X and iPad.

Price: \$199.

For information, visit www.steinberg.net.

**JBL RELEASES 3 SERIES MONITORS**

JBL Professional says its 3 Series studio monitors deliver exceptional imaging and detail in any listening environment.

They include the LSR305, a 5-inch powered studio monitor, and the LSR308, an 8-inch version. According to JBL, the former has a frequency response of 43 Hz to 24 kHz and a peak SPL of 108 dB, while the latter has a response of 37 Hz to 24 kHz and a peak SPL of 112 dB.

JBL says these monitors use technology developed for its M2 Master Reference Monitor, and that their Image Control Waveguide allows the listener to hear greater depth and ambience in recordings. Surrounding the high-frequency tweeter and located above the woofer, the waveguide controls sound emanating from the monitor in the vertical and horizontal planes. The waveguide optimizes the phase relationship of the loudspeakers and the blend of directed and reflecting sound arriving at the listening position.

JBL says the design allows subtle detail to be heard, even in a dense mix, and that it produces a wide stereo panorama with a solid phantom-center image. The waveguide enables 3 Series models to deliver neutral sound across a large working space, regardless of room acoustics, eliminating the need for the user to be positioned directly in front of the monitors when making critical adjustments to the mix.

The LSR305 retails for \$149.99, the LSR308 is \$249.99.

For information, contact JBL in California at (818) 894-8850 or visit www.jblpro.com.



AUDIO-TECHNICA INTRODUCES BP40 BROADCAST MICROPHONE

Audio-Technica's BP40 is a large-diaphragm dynamic broadcast vocal microphone that the company says delivers rich, natural, condenser-like sound. The 40 mm diaphragm features floating-edge construction that maximizes diaphragm surface area and optimizes overall diaphragm performance. The mic is equipped with a humbucking voice coil to prevent electromagnetic interference.

All-metal construction supports dependable performance in professional broadcast environments.

Its hypercardioid polar pattern provides isolation of a speaker's voice along with off-axis rejection. The mic is equipped with a multistage windscreen that provides internal pop filtering. According to the company, the capsule is placed back a bit from the windscreen in an optimal position to maintain commanding vocal presence even when the speaker is not right up on the mic.

A switchable 100 Hz high-pass filter offers greater protection from popping. The BP40 has a frequency response of 50 Hz–16 kHz, sensitivity of –48 dB (3.9 mV) re 1V at 1 Pa, and 450 ohms impedance.

The BP40 comes with an AT8384 mounting clamp that fits 5/8-inch-27 threaded stands; a 5/8-inch-27 to 3/8-inch-16 threaded adapter; and a protective pouch. For more protection from noise, shock and vibration, the mic can be used with the new optional AT8484 shock mount (\$99), which fits 5/8-inch-27 threaded stands and is available separately. Price: \$349.

For information, contact Audio-Technica U.S. in Ohio at (330) 686-2600 or visit www.audio-technica.com.



DENON DELIVERS DN SERIES

The two-way DN-304S, DN-306S and DN-308S (shown) from Denon Professional are designed to support multimedia playback. These speakers feature studio-grade acoustics. Larger models offer proximity controls for flexible placement options.

The DN-304S system comprises two acoustically-inert MDF speaker cabinets, each containing a 4-inch polypropylene-coated woofer and a 1-inch ferrofluid-cooled tweeter mounted to a proprietary waveguide. The left speaker contains the system's stereo amplifier, rated at 20 W per channel utilizing Class A/B amplification. The DN-304S features 1/4-inch balanced, 1/8-inch inch stereo and RCA unbalanced inputs.

The 100 W DN-306SA and 130 W DN-308SA combine 1.25-inch silk dome tweeters with 6- or 8-inch woven Kevlar woofers, respectively.

A three-position proximity control adapts each speaker's bass response for placement next to or away from walls, to maintain clarity and balance. Standard VESA mounting holes on the bottom panel of each cabinet expand the placement options from tabletops and shelves to walls and ceilings. Balanced XLR and 1/4-inch (6.3 mm) inputs allow simple connection to common audio sources.

The DN-306S and DN-308S come with detachable metal grilles framed by a liquid-smoke metallic trim. When on, a blue LED assists with placement orientation. The grilles attach to the baffle board by way of hidden neodymium magnets, for a "fastener-free" appearance.

The company says the bracing in each 300-series cabinet has been optimized to ensure that the drivers have a solid, vibration-free platform.

For information, visit www.denonpro.com.



ALESIS ELEVATE 6 BUILDS ON M1

Alesis says that its Elevate 6 monitor is a descendant of its M1 monitors, which it says are known for being rugged and dependable.

There's an improved woofer, moving from the M1's carbon fiber to Kevlar in the Elevate 6. Kevlar is lighter and stiffer than carbon fiber, giving the 6 faster transient attack and more linear response through the bass and midrange.

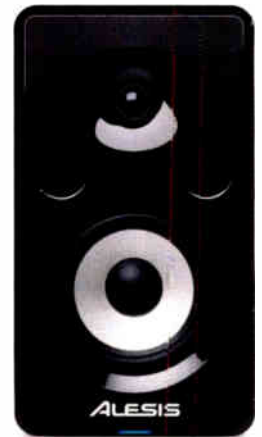
An elliptical tweeter waveguide has been added. The waveguide directs the Elevate 6's dispersion in a controlled, predictable pattern. The company says this ensures a widened listening "sweet spot" even well off axis while preventing random scattering of the sound, which would blur the sonic image and reduce detail and intelligibility.

The Elevate 6's "radiused" baffle means that when sound waves from the woofer and tweeter reach the baffle's edge, they won't diffract or degrade but radiate smoothly, the company says.

The Elevate 6 has a frequency response of 55 Hz–20 kHz, ±3 dB. It offers three-position HF and LF trim controls to customize the sound and has internal 50 W LF amplifier/25 W HF Class A/B amplifiers, for smooth performance and generous clipping headroom.

Compact size (15 x 8.5 x 10.3 inches) makes placement easier; front-firing bass ports allow for placement up to a wall behind it without "blocking" the bass output. Price: \$249.

For information, visit www.alesis.com.



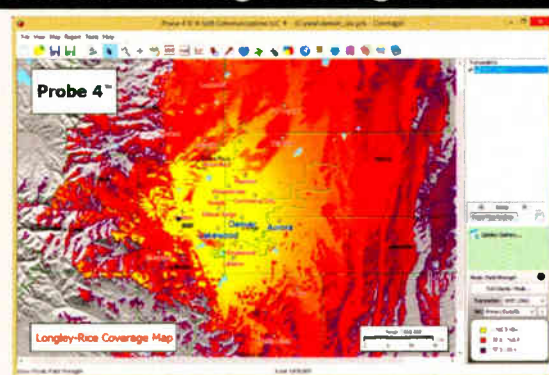
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2" plastic "spot" reels 6.5 or 8" diameter, as used for quad video. Wayne, Audio Village, 760-320-0728 or audiovlg@gte.net.

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I'm looking for San Francisco

radio recordings from the 1920's through the 1980's. For example newscast, talk shows, music shows, live band remotes, etc. Stations like KGO, KFRC, KSFO, KTAB, KDIA, KWBR, KSFX, KOBY, KCBS, KQW, KRE, KTIM, KYA, etc, I will pay for copies... Feel free to call me at 925-284-5428 or you can email me at ronwtamm@yahoo.com.

Looking for a broadcast excerpt of a San Francisco Giant's taped off of KSFO radio from 1959, interviews with Willie Mays, Dusty Rhodes & some play by play excerpts, also features a homerun by Willie Mays and Felipe Alou stealing second base, running time is 18:02, also looking for SF Giants games and/or highlights from 1958-1978 also taped off KSFO Radio. Ron, 925-284-5428 or ronwtamm@yahoo.com.

Looking for KFRC signoff radio broadcast from 1930 Andy Potter, running time is 0:22 & also the KLX kitchen the program guest is Susanne Caygill, a discussion of women's affairs with a long promotion for Caygill's appearance at a local store. Anne Truax, Susanne Caygill, running time is 13:44. Ron, 925-284-5428 or email ronwtamm@yahoo.com.

Looking for KTIM FM radio shows from 1981-1984 if possible unscoped. R Tamm, 925-284-5428 or ronwtamm@yahoo.com.

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with 802 exciter; (3) Continental 816R-2 20 kw, with 802 exciters; Collins 831 G2 25 kw with 802 exciter; Collins 831 G 20 kw with 802 exciter; Collins 831 G 10 kw with 802 exciter; CCA 25 kw solid-state exciter; CCA 20 kw solid-state exciter (single phase); BE FM 35 kw with FX 50 exciter; BE FM 20 kw with FX 50 exciter; Harris 20 K with MX-15 exciter; Harris 10 K with MX-15 exciter; Harris 10 H-3 with MX-15 exciter; Harris 5 K with MX-15 exciter; Harris 2.5 K with MX15 exciter; Collins 831D 2.5 kw with solidstate-exciter; CCA 2500 E with solid-state exciter; Altronics 6612 air cooled dummy load(low hours); New Blanc Royal 200 foot self supporting super tower, for full information and price quotes with freight via AIR Ride Van (prepaid) Direct Line 972-931-6055 or WITKEAUX@yahoo.com.

Collins 831d-2 FM xmtr; Belar Stereo Monitor; Belar FM Monitor; Harris xmtr, tuners and a bunch more. Gary or Oz, Tri-County Broadcasting, 320-252-6200.

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IN PHOTOS

Dimitar Atonasov of Deva Broadcast, right, runs through the monitoring features of the DB4004 for Carlos Acero of Radio Genesis. NAB reported about 26,500 international attendees.



Photo by Jim Peck

Burk Technology's Melanie Paras keeps up with the consequences of touching the touch-screen. The company celebrated its 30th anniversary, showing a timeline of its product introductions and a display of archival Radio World advertisements.



Photo by Jim Peck



Photo by Jim Peck

Consulting engineer Tom Ray is working to establish a North American Codec Manufacturers Interoperability Group. Comrex is on board and provided seed funding; Ray said he hopes to make this an industry-wide effort.



Photo by Jim Peck

GatesAir introduced the FLX series of liquid-cooled transmitters. Shown are redundant circulating pumps, expansion tank and some plumbing. The 10 kW version can have pumps in the same rack as the transmitter proper. Heat exchanger assemblies, not shown, complete the loop. Liquid-cooled RF pallets are plug-and-play.

Charles Sather, center, chief engineer of Koahnic Broadcast Corp. in Anchorage, Alaska, won a Bridge-IT XTRA IP audio codec and Report-IT Enterprise bundle from Tieline. He's shown with Tieline's Charlie Gawley and Jake Daniluck.



Photo courtesy Tieline

Photo by Elaine Jones



Don Jones, left, co-founder of the RF Specialties Group, shares a laugh with NAB President/CEO Gordon Smith, who presented Jones with a certificate of appreciation for 50 years of NAB Show attendance.



Photo by Jim Peck

David Simpson, chief of the FCC's Public Safety and Homeland Security Bureau, speaks about the future of EAS. Damon Penn, assistant administrator of the National Continuity Program of the Federal Emergency Management Agency, looks on.

Photo by Jim Peck



Dave Edmiston, CEO of SWR Inc., speaks with Greg and Ginny Buzzell of Rockfleet Broadcasting.

Photo by Jim Peck



KINTRONIC LABS INC.

Come talk to us about AM Revitaliz and how you can help!

Kintronic Labs President Tom King, center, was congratulated by colleagues for receiving the NAB Radio Engineering Achievement Award. He is shown with Glynn Walden, senior VP of engineering for CBS Radio (himself a past award recipient), and Lauren Libby, president of TWR/Trans World Radio. The concerns of AM broadcasters were a theme of the show, with FCC Chairman Tom Wheeler saying he will propose changes to AM rules soon.

© NAB Robb Cohen Photography



It was the year of the drone. Floor demos, sessions and a special pavilion explored the technical, safety and privacy considerations.

Eventide Chairman Richard Factor of Eventide, left, and Wheatstone CEO Gary Snow shake hands on their companies' cooperation. Eventide's new BD500W delay unit comes with WheatNet-IP networking, built in for integration of profanity delay into the WheatNet-IP audio and control network.



Photo by Bob Martin

Jessica Shute of Broadcasters General Store uses an Icom IP100H walkie-talkie to converse with Cam Cornelius of "The Dave Ramsey Show." Between them is a Neumann TLM103 microphone.



Photo by Bob Kovacs



Luca Bergonzini of Elenos, left, discusses the company's E10000 FM amplifier with Edward Seaman of Globtek.

Photo by Bob Kovacs



Kevin Campbell of WorldCast Systems leads a Broadcast Engineering Conference presentation on "The Audio Cloud."

Eugene Johnson, CEO of Ward-Beck Systems, shows off an eye-catching LED VU meter.



Photo by Bob Kovacs



Arrakis Systems' Dale De La Poirte, right, discusses the MARC-15 console with Jack Ondracek, director of engineering for Centro Familiar Cristiano, left, and Chery Ondracek.

READER'S FORUM

ONLINE FILES, PROS AND CONS

Mr. Hayes makes a good argument to end public files. They lack relevance; much is redundant or available elsewhere; and they are burdensome ("Why Do We Need Public Files, Anyway?," Feb. 11).

There is a flip side to the argument. I have looked at more public files since TV went to the Internet than ever before. Frankly, it is burdensome to go to the station or its lawyer/designated repository; and it's a little daunting, like buying birth control in a big box store.

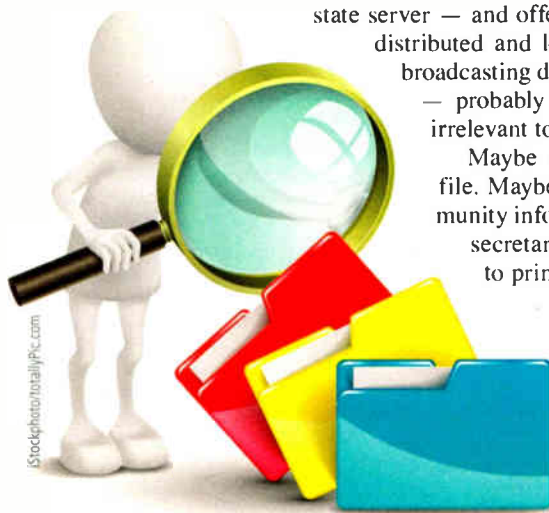
With curiosity as my main driver, it was hard to ask for the file or quickly gain the trust or respect of the keeper, understandably looking down their nose with unspoken defensive inquisitiveness. The file often was in poor shape and, dare I say, strewn about. I don't think I was ever asked to sign the sheet, nor did I ask for a copy of anything.

Personally, I think it is a good thing to have the public file easily anonymously and universally available. The broadcast contract is public spectrum in return for serving the public interest.

Admittedly, a station that is programmed from an out-of-state server — and offering endless hours of a highly distributed and long ago exhausted buffoon of broadcasting dreaming up the next conspiracy — probably *is* irrelevant. Maybe even too irrelevant to deserve a license.

Maybe it's not about maintaining the file. Maybe it's about gathering the community information, and even if it's just the secretary or the engineer committing it to print, the thought process required certainly doesn't hurt. Maybe the owners and management will occasionally even look at their public file, if it's online.

Fred Baumgartner
Elizabeth, Colo.



CATALOG MEMORABILIA

Enjoyed Mr. Angelo's column ("Preserve Radio History, Together," March 1 issue). His organization is a great example of how to preserve radio history at the local level.

As we begin collecting memorabilia and artifacts of Georgia radio history, we hear story after story about corporate takeovers and the destruction of items at stations all over the state. An engineer recently told me that, when one of the big companies bought the station he worked for, they filled dumpsters with anything from the station's history. He rescued many priceless pieces of history and has entrusted them to us to preserve. We work closely with Georgia State University to preserve the history of radio broadcasting in Georgia.

What you don't see on our Web pages are the hundreds of documents and items being catalogued and preserved. They are, and will be, available to researchers for the future. I would be happy to talk to any readers interested in starting a preservation effort in their market of state.

John Long
President

The Georgia Radio Museum and Hall of Fame
St. Marys, Ga.

MICS

Responding to the March 1 article "What's in Your Production Toolbox?":

I have used the Zoom H4n for over five years. Not willing to give it up, as the stereo mic features and portability are great. I record live bands with or without the internal mics. It features compression settings and SD card and USB for connecting to the outside world. Emmis New York uses them for the street teams to capture listener responses.

Timothy Braddock
Assistant Chief Engineer
Emmis Communications New York
New York





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Joseph M. Davis, P.E.
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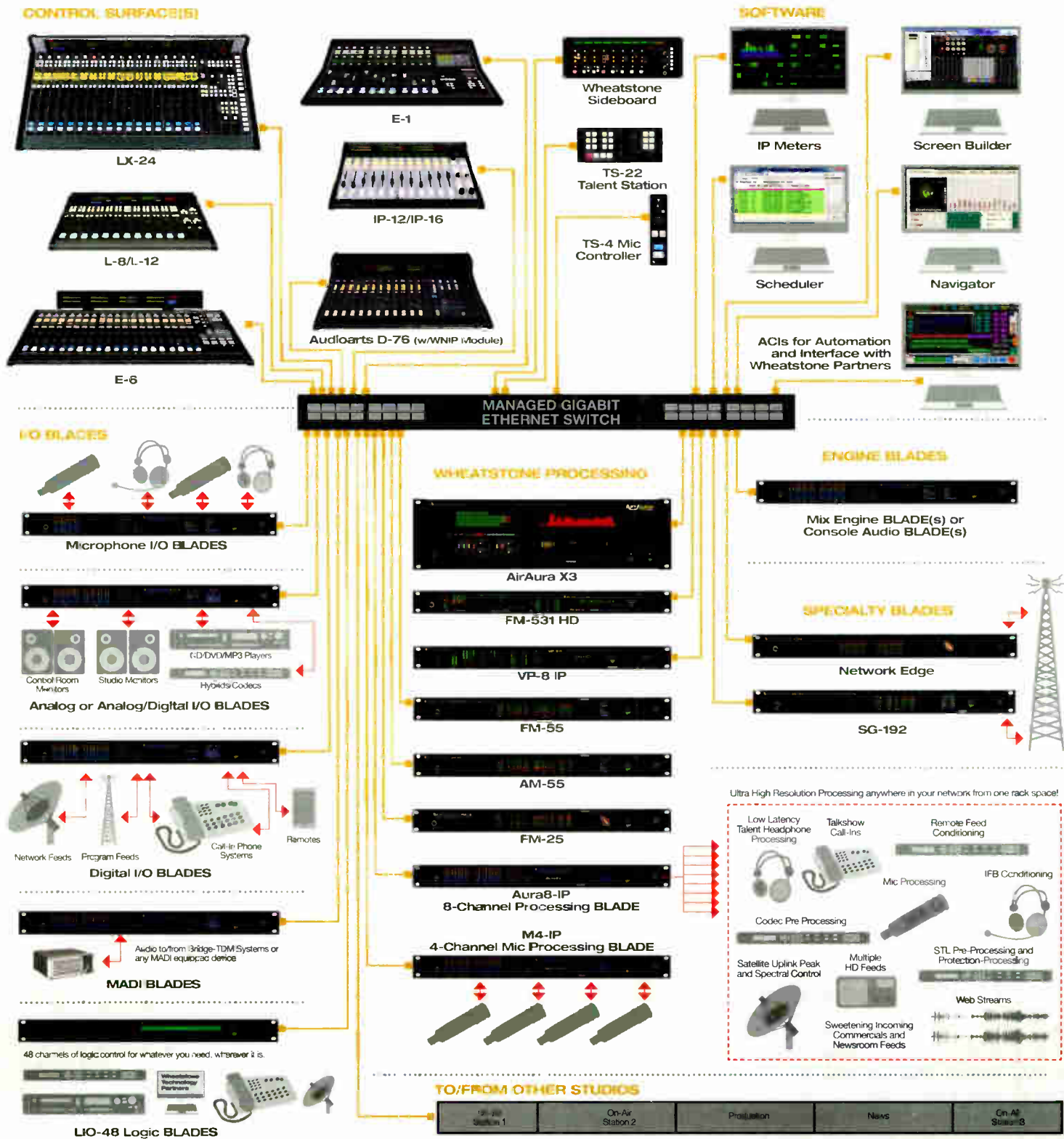
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