



RADIO WORLD

AUGUST 12, 2015 | The News Source for Radio Managers and Engineers | \$5.00 | RADIOWORLD.COM

Mini Strategy Supports Broadcast Mobility

Belgian broadcaster is making use of Mini remote cars, suited for urban areas and equipped with "OB" gear

Wim Moortgat and Ward Weis stand next to a new Radio 2 car.



Courtesy M. Maes

INTERNATIONAL RADIO

BY MARC MAES

ANTWERP, BELGIUM — In January, VRT's Radio 2 (www.radio2.be) took delivery of new Mini Cooper cars in support of its local programs. Their compact size allows them to operate as remote vehicles in urban areas, equipped with the latest technology.

In 2004, the Dutch-language public broadcaster had decided to invest in "outside broadcast" or OB vans in addition to the station's fleet of mobile radio and TV studios to provide live footage for Radio 2's regional programming. That first generation of its radio vans — Mercedes Vaneo series — had come the end of their useful lives and were replaced this year by the small Mini Cooper cars.

RADIO, VIDEO

Wim Moortgat of VRT's technical production team said that the cars serve radio's ongoing evolution.

"Radio is about more than just listening. We have text messages, pictures and video footage — and in addition to the 'classical' radio set, we run content on the Web, streaming and TV," he said. "The first generation of radio cars made use of ISDN via satellite, now we have the Internet via satellite, allowing us to transmit sound and images to the studio."

As regards concept and design of the new cars, user-friendliness and comfort

(continued on page 10)

The Push Is on for LP-250

LPFM advocates seek power parity with translators and boosters

BY RANDY J. STINE

WASHINGTON — A power-increase proposal is stirring new debate about low-power FM broadcasters and has LPFM and translator advocates again taking up positions on the subject.

Through a petition for rulemaking, REC Networks asked the Federal Communications Commission to consider allowing eligible 100-watt LPFM stations to boost power to 250 watts in order to increase building penetration and overcome the effects of multipath in their coverage areas. REC also seeks other benefits for LPFMs including second-adjacent channel protections from FM translators and boosters.

QUICK EXPANSION

Low-power FM stations currently broadcast at a maximum of 100 watts and typically reach a radius of approximately 3-1/2 miles from the antenna. They must be licensed to non-profit entities and often are

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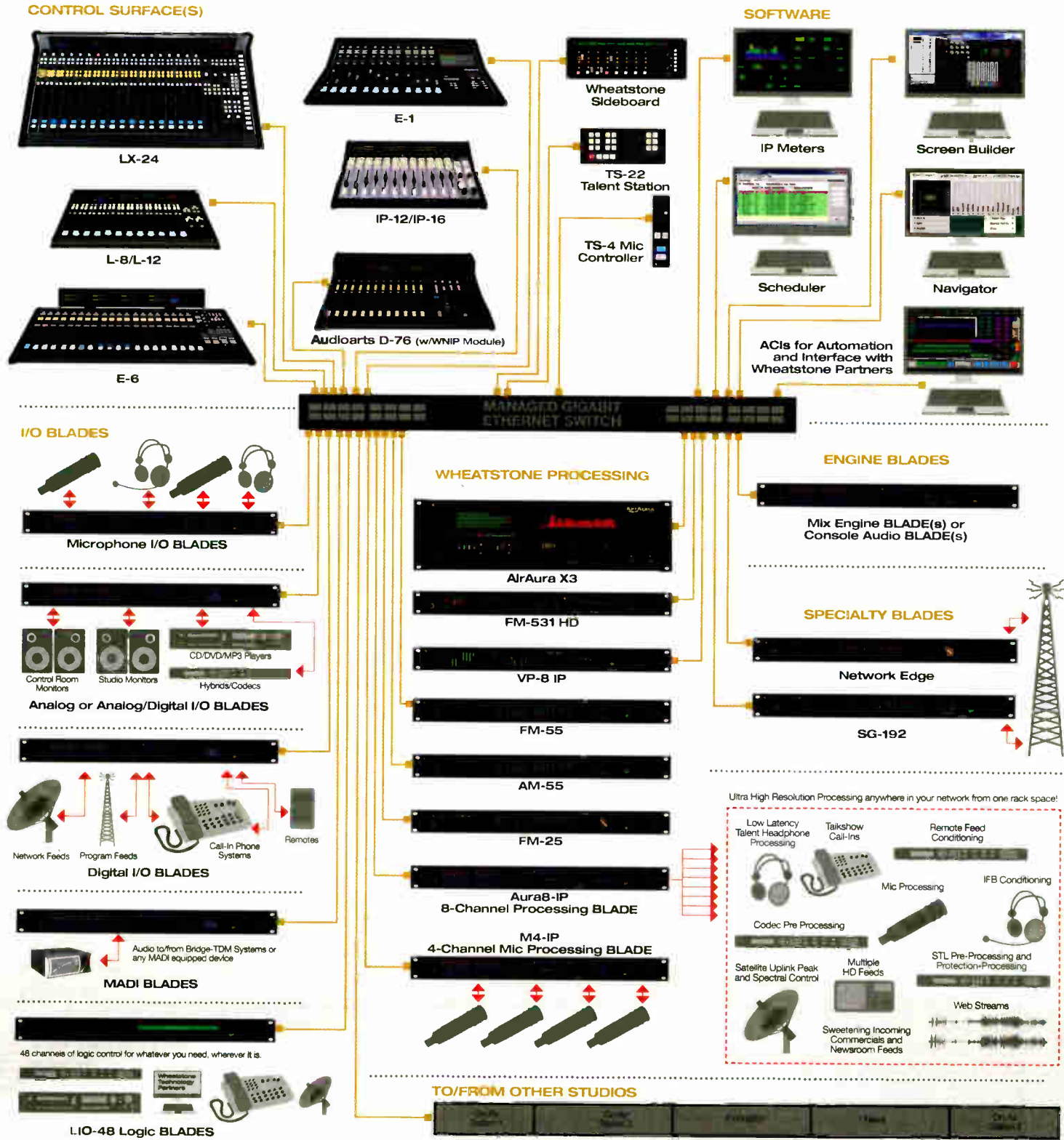


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Ensure the Security of Your RDS

What can we learn from recent security attacks or compromises of RDS encoders?

RADIODATA

BY ALAN JURISON

This is one in a series of Radio World articles about how to "Get the Most Out of RDS." See past articles at radioworld.com/rds.

At the Radio Show in September 2014, the National Radio Systems Committee adopted NRSC-G300-B, and the document was published formally on the

NRSC website in December. A copy of the NRSC-G300-B guideline can be obtained at www.nrscstandards.org.

For those not familiar with the NRSC-G300-B guideline and its recent updates, it is a reference document for engineers to understand both high- and low-level details of the RDS specifications and hardware, and how to best configure radio stations for optimum RDS performance and compatibility across an array of receivers. I am currently the chair of the NRSC RBDS Usage Working Group that produces the

G300 document, and I am one of many contributors of its contents.

SECURITY

The recent "B" revision of this document features a new Section 4.6 "RDS Encoder Security" that station engineers and those performing IT duties for radio stations should review. This could essentially be seen as a formal industry response to address small-scale security attacks or compromises of RDS encoders, which have typically involved the station transmitting false or profane information in the PS or RT fields. There have been several published reports in the media about these occurrences, by Radio World and others. Private reports indicate there have been unpublished attacks as well.

RDS encoders are designed to be easy to configure and access. How to address these devices is widely known. Instruction manuals for most RDS encoders are available online to assist engineers installing these devices. This same information is available to people who may be looking to compromise an RDS signal.

The documented compromises were of RDS encoders directly attached to the Internet without any protection devices, such as a firewall or router. However, the discussion in NRSC-G300-B analyzes many other avenues for compromise, both physical and logical that are worthy of your consideration and review.

The amount of items covered in G300-B is too lengthy to go into detail here; I invite you to download a copy and read it for yourself. However, I think it would be helpful to go into detail on the most common attack method of the known RDS encoder compromises in 2013–2014.

PRIVATIZE

As RDS use has become more common in automobile radio receivers, many stations have been seeking low-cost ways of implementing dynamic RDS solutions. In some cases, stations looking to do this on a budget may not be able to purchase a new STL that offers a private, secure TCP/IP connection from the studio to the transmitter site.

Many studio locations already have a connection to the Internet. In some cases, an inexpensive Internet connection to the transmitter site is added, the RDS encoder is placed on the Internet, and the studio sends updates to the RDS encoder over the Internet. Many of the known compromised RDS encoders were configured as depicted in Fig. 1.

In these situations, it is recommended

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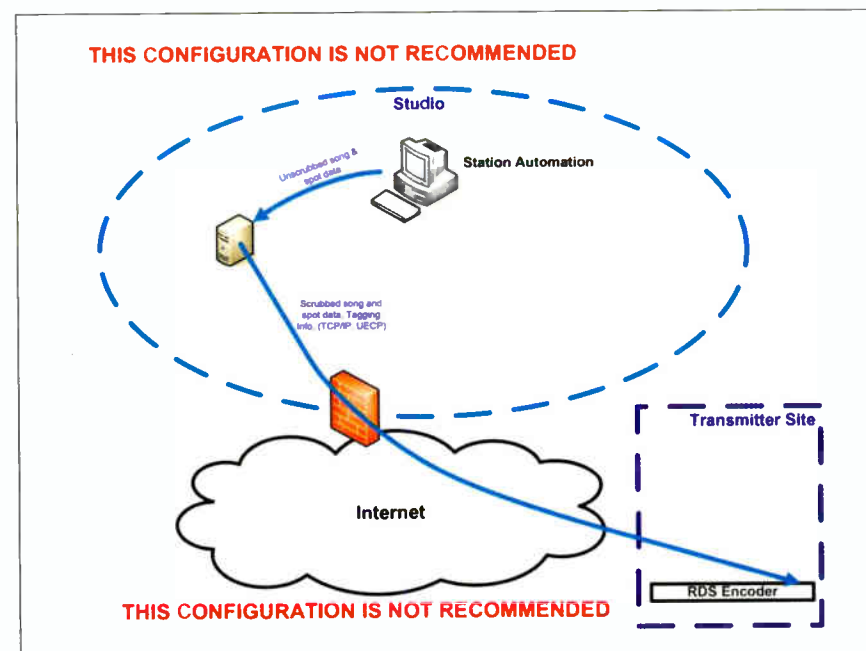


Fig. 1: Not recommended. The RDS encoder is directly attached to the Internet.

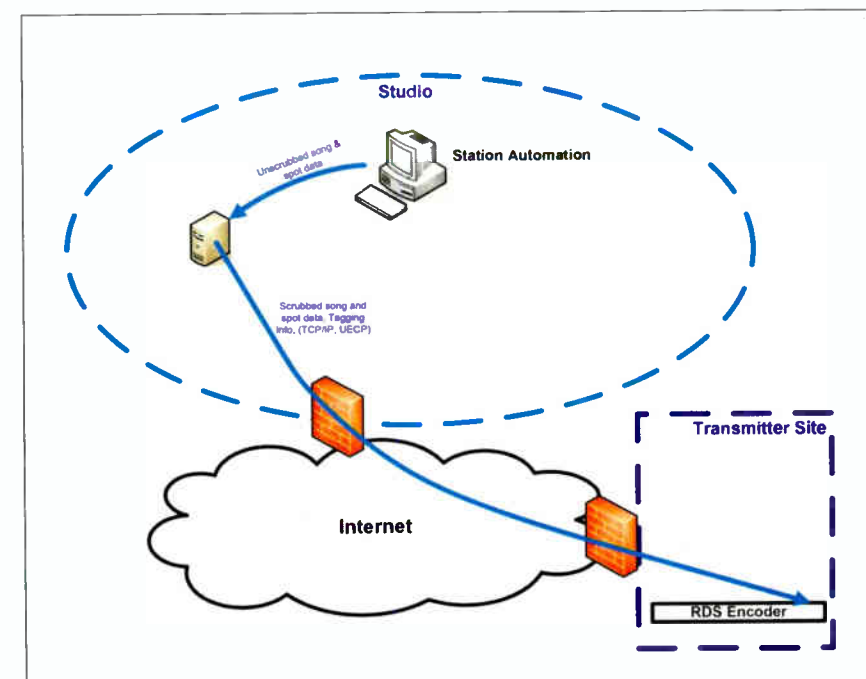


Fig. 2: Recommended. The RDS encoder is protected by firewall or VPN router.

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Radio World Founded by Stevan B. Dana

Radio World (ISSN: 0274-8541) is published bi-weekly with additional issues in February, April, June, August, October and December by NewBay Media, LLC, 28 East 28th Street, 12th Floor, New York, NY 10016. Phone: (703) 852-4600, Fax: (703) 852-4582. Periodicals postage rates are paid at New York, NY 10079 and additional mailing offices. POSTMASTER: Send address changes to Radio World, P.O. Box 282, Lowell, MA 01853.

For custom reprints & eprints please contact our reprints coordinator at Wright's Media: 877-652-5295 or NewBay@wrightsmedia.com

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NAB Seeks Authors for Reference Work

Labor begins on the 11th edition of the association's trusted tech handbook

How good is your tech writing? How savvy are you about radio broadcast tech topics?

If you answered "very" to these questions, you should be writing for Radio World! But there's another publication that wants your contributions too.

The National Association of Broadcasters plans a new edition of its venerable "NAB Engineering Handbook."

Hot topics eight years ago included HD Radio, HDTV, 2GHz, EAS, metadata, audio over IP, and Internet broadcast. What topics will debut in 2017?

"First published in 1935, this will be the 11th edition of this industry-standard reference book, with an anticipated release date of April 2017," NAB said in an announcement. (For the deep trivia-minded: Can you list its prior years of publication?)

This effort will be led by several people familiar to our readers. The editor-in-chief is Garrison Cavell, a broadcast engineering consultant and

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DESCRIPTION TABLE OF CONTENTS AUTHOR INFORMATION

The NAB Engineering Handbook provides detailed information on virtually every aspect of the broadcast chain, from news gathering, program production and postproduction through master control and distribution links to transmission, antennas, RF propagation, cable and satellite. Hot topics covered include HD Radio, HDTV, 2 GHz broadcast auxiliary services, EAS, workflow, metadata, digital asset management, advanced video and audio compression, audio and video over IP, and Internet broadcasting. A wide range of related topics that engineers and managers need to understand are also covered, including broadcast administration, FCC practices, technical standards, security, safety, disaster planning, facility planning, project management, and engineering management.

The prior edition is shown on sale at the NAB's online bookstore.

president of Cavell Mertz & Associates. The associate editors are David Layer, senior director of advanced engineering at NAB; Tom Osenkowsky, engineering consultant and contributor to Radio World; and Skip Pizzi, senior director of new media technologies at NAB, who is former editor of Radio magazine and also a past contributor to RW.

They plan to take on "numerous

from known sources to known ports. NRSC-G300-B Table 3 covers this specific configuration. Keep in mind, going this route may well be inexpensive, but it is still prone to attacks.

The best level of protection is by locating the RDS encoder on a private network. If you are using an Internet connection delivered to the site, the best method to extend a private network to the site is via VPN.

There are many more security considerations explored in the guideline. I strongly recommend you consider implementing as many security recommendations outlined in NRSC-G300-B as possible.

Alan Jurison is a senior operations engineer for iHeartMedia's Engineering and Systems Integration Group. He also chairs the NRSC RDS Usage Working Group. He holds several SBE certifications including CPBE, CBNE, AMD and DRB. His opinions are not necessarily those of iHeartMedia, the NRSC or Radio World.

emerging technology topics not covered in previous editions, along with comprehensive revisions of earlier subjects." Cavell spoke in the announcement about wanting the book to be not a "heavy scholarly work filled with equations and esoterica that will sit on shelves unopened," but a more

FROM THE
EDITOR



Paul McLane

approachable, understandable reference. They also plan to include a more international perspective.

(If NAB's work in significantly updating its much smaller but still very useful book "A Broadcast Engineering Tutorial for Non-Engineers" in 2014 is any indication, we can look forward to good things from this latest project.)

The book will have 120 chapters, and the editors need contributors. Each author will receive a copy of the book and an honorarium — but really, this kind of thing is done as a service to the industry, and I salute all who have worked on the handbook, past and present.

If you are a "skilled practitioner" — if you know a lot about broadcast fundamentals, regulation, streaming, EAS, disaster recovery, AM concepts, electrical systems, broadcast automation, satellite infrastructure and/or any specialized area of our industry and are reasonably adept at writing about it — drop them a line by Sept. 1.

You can find a list of topic areas along with the contact information at <http://nablab.org/leh11.asp>. Tell them you read about it in Radio World.

(Years of publication were 1935, '38, '46, '49, '60, '75, '85, '92, '99 and 2007, according to NAB's announcement of the prior edition in 2007.)

CORRECTION

CREDIT WHERE IT'S DUE

The photographs that ran with our Aug. 1 story "Live From Havana: Minnesota Public Radio" should have been credited to MPR/Nate Ryan.



Radio World welcomes your own stories of interesting projects, remote broadcasts and installations. Email me at radioworld@nbmedia.com.

RDS

(Continued from page 3)

that the transmitter site be supplied with a VPN-based router, and a VPN be established from the studio to the transmitter site, offering a secure means of communicating with the RDS encoder along with other equipment that may be located at the site, as depicted in Fig. 2. The creation of the VPN privatizes the RDS encoder.

However, in situations where cost is a major concern, it is strongly recommended a low-cost firewall be installed at the transmitter site. When searching for this type of firewall, you are looking for a firewall that supports port forwarding with IP source restrictions. Not all inexpensive firewall/routers support this feature, so it is best to do some research and perhaps some experimentation. Using a similar configuration topology as Fig. 2, the firewall would be configured to only permit and pass through traffic

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Photo by Dan Slentz

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Courtesy Paul Rismandel

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operated by community groups, schools and churches.

Translators, which rebroadcast the signal received from a primary AM or FM radio station on a different frequency, have a maximum allowed ERP of 250 watts, though many operate below that power due to other technical restrictions.

The LPFM service has been expanding thanks to the Local Community Radio Act, signed by President Obama after passage by Congress in late 2010. The LCRA explicitly authorized the FCC to license additional local low-power FM radio stations. In addition, it eliminated third-adjacent channel LPFM spacing requirements and allowed for the commission to create standards for waiving second-adjacent channel protection requirements.

There were 1,202 LPFM stations licensed to be on the air as of mid-July, according to FCC data, compared to 814 at the mid-point of 2014. The number is expected to grow considerably as the FCC finishes working through 2,819 applications filed in the LPFM window in 2013, and as stations with construction permits go on the air. A July search of the FCC database for LPFM stations with "CP Off Air" returned 1,468 results, though it's unknown how many LPFM CP holders will make it through the process of both getting on air and then staying on.

PRIOR EFFORTS

REC Networks is a community radio advocate that provides a variety of LPFM services. Its founder Michelle Bradley estimates that 50 to 75 percent of LPFM stations would be able to upgrade to LP-250 under the proposal.

LPFM advocates have tried before to add power to the service. The Amherst Alliance filed a similar petition in 2013 asking the commission to consider allowing LPFMs to broadcast at between 101 and 250 watts. But the FCC did not solicit public comments for that request.

Does its willingness to seek comment now mean a higher chance of adoption? One observer familiar with these developments said it's difficult to gauge the seriousness with which the commission takes a proposal based on whether it has been put out for comments. "The FCC could be being pressured by a special interest group, either directly or through Congress or the administration, to move forward with the petition," the observer said.

Previous LPFM proposals also restricted upgrades to rural stations; the latest petition called for no geographic restrictions, according to Bradley,

though lack of available spectrum in larger urban areas would probably exclude LP-250 there, especially if the FCC were to schedule an FM translator window prior to a power increase.

REC's petition also asked that the FCC allow certain relocation requests

radio disagree with most aspects of the REC proposal, including the call for protection parity with FM translators.

The National Association of Broadcasters in its comments called the request by REC Networks "premature." It asked the commission to wait until regulators

Interference with incumbent radio stations is a very real issue, made even more dramatic with a 250- rather than a 100-watt station.

— Dennis Wharton, NAB

to be treated as minor moves — for 100-watt LPFM stations, up to 6.9 miles; and for upgraded LP-250 stations up to 8.7 miles.

The second-adjacent channel protection requirements in the REC proposal "fixes an inequality between LPFM rules and the translator rules," Bradley said. "Currently, a translator can come into the second-adjacent channel of an LPFM but an LPFM cannot come into the second-adjacent of a translator without asking for a waiver."

Advocates for commercial full-power

can fully assess the interference impact from the many 100-watt LPFM stations approved out of the 2013 window.

"NAB support for our compromise with the LPFM community a few years ago was premised on the understanding that these stations would remain at 100 watts. Not 150 watts. Not 200 watts. And not 250 watts," said Dennis Wharton, NAB executive vice president of communications.

"Interference with incumbent radio stations is a very real issue, made even

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LP-250

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more dramatic with a 250- rather than a 100-watt station."

TRANSLATOR DEMAND

Some 500 groups and individuals filed public comments on the petition for rulemaking. NAB was one of only a few that voiced opposition, according to Sanjay Jolly, policy director for Prometheus Radio Project, which builds and supports community stations.

Jolly said NAB's suggestion that the FCC wait to act on a commonsense, evidence-based and widely supported improvement to the LPFM service seems to be an effort to kill the measure by "delaying it out of existence."

LPFM proponents said NAB seems mainly concerned that if the FCC were to allow LPFMs to increase to 250 watts before the next FM translator window, it would likely limit opportunities for more AMs to apply for translators, something that has been proposed to the FCC in the separate "AM revitalization" initiative.

Indeed, said Wharton, "In markets where the FM band is crowded, increasing LPFM power would leave no room on the radio dial for translators for AM radio stations. Some AM radio station operators have waited years to apply for an FM translator, and the FCC has an ongoing proposal that might open an FM translator window exclusively for AM broadcasters. The commission should address translators for AM radio before jumping into an LPFM proceeding that could crowd out AM radio stations from a rightful place on the FM band."



Kirk Smith/The Review

The power increase discussion comes even as numerous LPFMs from the most recent window have CPs but are not yet on the air, including WIZU(LP) in Newark, Del., where Stephen Worden works the mic in a photo from Radio World's recent eBook "LPFM on Fire."

The FCC changed its rules and policies several years ago to allow FM translators in certain circumstances to re-broadcast the signals of AM stations and HD sub-channels. That development has turned translators into an even more highly sought after commodity, observers said. Some AM advocates now want to broaden the practice even more.

NAB stated in its comments that demand for translators "currently far outstrip[s] supply, creating untenable bidding wars." It cites reports of FM translators selling for \$30,000 in rural and small markets and for as much as \$50,000 in mid-sized and suburban markets, and said some AM owners could be priced out of the market.

WHAT NEXT?

Wharton said it is unclear what the FCC will do next on the LP-250 idea. He said that if the commission releases a notice of proposed rulemaking, NAB would be an active participant throughout the process.

"We do view a rulemaking as premature since the commission has not finished processing all of its approved LPFM applications, and a majority of the approved LPFMs have not yet started operating or even been built," Wharton said.

In replies to NAB's assertions, REC Networks told the FCC there is a sufficient sample size. Bradley said 412 LPFM stations from the latest window

have completed construction. "What the NAB also ignores are the 773 licensed low-power stations that are still around from the original LPFM filing window in 2000-2001."

REC Networks also disputes the NAB's "slippery slope" theory regarding LPFM. Some opponents are worried that other LPFM proponents will ask the FCC for additional power increases in the future.

"At what point does LPFM cease to be considered low power?" one commenter asked.

NAB also argues that Congress did not provide for LP-250 service in the LCRA in 2010.

Tracy Rosenberg, executive director of Media Alliance, discounted that. "There is certainly no codification or mandate contained in the LCRA prohibiting LP-250 service or even for that matter prohibiting LP-50 service."

Bradley emphasized that the REC Networks proposal says nothing about creation of new stations, but also that "Section 5 of the LCRA literally has designed a regime where FM translators and LPFM 'take turns' at obtaining spectrum. With the expiring construction permits that have not asked for extensions, this will open up more spectrum for translator applicants if the FCC opens this window in late 2015 or 2016. It is my hope there will be another LPFM filing window around 2018 or 2019," she said.

Media Alliance, which advocates for a "free, accountable and accessible media system," expects the LP-250 issue will move into a full rulemaking with another round of comments and replies from both sides as well as the public.

"I think it is clear that the NAB's earlier panics about interference were largely unwarranted, so it probably comes down to an assessment of the translator issue," Rosenberg said. "LP-250 advocates will likely need to present some solutions for maintaining translator availability despite new LPFM expansion applications."

Don Schellhardt, a longtime backer of LPFM, said, "The NAB points to various problems that could supposedly arise if LP-250s are licensed. However, if these problems could materialize at all, they seem likely to materialize only in areas with moderate to severe spectrum scarcity," Schellhardt wrote.

Schellhardt and Nick Leggett were the first to petition the FCC in 2013 to consider allowing LPFMs to broadcast at between 101 and 250 watts in mostly rural areas, he said.

INTERFERENCE

Interference concerns sparked comments in the docket from several filers, including Educational Media Foundation, a non-profit organization

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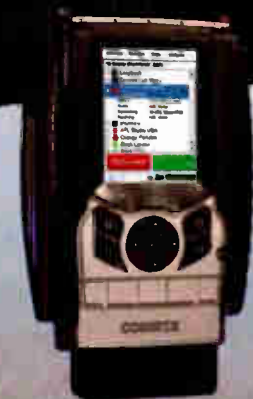
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LP-250

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that operates both full-power stations and translators.

"The commission should only initiate a formal rulemaking in connection with the petition, where, as part of the proceeding, the commission considers the interference that will be caused by LPFM stations, both under current processing standards and under those proposed by REC," wrote David Oxenford, an attorney representing EMF.

The FCC will have to decide if those interference standards meet the requirements of LCRA and the public interest, Oxenford concluded.

EMF, which uses translator stations for its Christian music networks K-Love and Airl, said it understands the LPFM community's desire for more power, but asked the FCC for a full review of interference rules so that LPFMs are held to the same standard as translators in that regard.

The LP-250 proposal will not add any additional interference to full-power stations by most LPFM stations.

— Michelle Bradley

The organization also said the FCC should manage carefully both the LPFM service and the expectations of those filing for it. "By its very nature, the LPFM service is targeted to those who have little experience in the operation of radio stations, and the realities of LPFM operations can be a surprise to broadcasting novices."

Asked for comment on interference concerns, Bradley told Radio World, "One thing to remember is that a decade prior to the LCRA, the commission had imposed a 'buffer zone' of 20 km around the maximum service contours of all domestic full-power facilities. The intention at the time was to permit full-power

TIME SHARE ISSUE

REC Networks founder Michelle Bradley said a proposal regarding LPFM time-sharing arrangements was "the most misunderstood aspect" of RM-11749.

"What we are proposing is that LPFM stations that are operating under a time share agreement and are subject to the local programming pledge as a result of the outcome of their MX group should be permitted to operate a prorated amount of local programming per day based on the number of hours they are authorized to broadcast," she said.

"Since unlimited stations are authorized to operate 24 hours in a day and the pledge is for 8 hours per day, which is one-third of the authorized hours, REC feels that it makes sense to apply that one-third number across the board. Therefore, if a station is only authorized to broadcast 12 hours per day due to a time share

stations to be able to move sites with no interruption to the LPFM station.

"The LP-250 proposal will not add any additional interference to full-power stations by most LPFM stations," she continued. "For a small number of

LPFM stations, where an upgrade to LP-250 would result in contour overlap, REC is proposing additional rules that would limit the effective radiated power or not allow the upgrade at all if the upgrade facility would result in contour overlap with the full-power station. This is the so-called 'foothill rule.'"

OTHER CHANGES

John Garziglia, a telecom attorney with Womble Carlyle Sandridge & Rice, said that if it does consider LPFM and translator power equality, the FCC could take the opportunity to examine other minor technical tweaks to its rules to bring more congruity on an engineer-

ing basis between the services.

"Both LPFMs and FM translators are now limited by IF spacing, a relic of long-bygone receiver technology. If LPFMs are allowed to raise power to 250 watts, then both LPFMs and FM translators should not be limited by the IF spacing exclusions to 100 watts for LPFMs and 99 watts for FM translators," Garziglia said.

In addition, LPFMs are now allowed to move by a minor change application to any channel on the FM dial, Garziglia said. A similar parity is merited for FM translators by the Local Community Radio Act of 2010, he said.

It's an issue on which Garziglia has lobbied the FCC on behalf of one of his clients.

Meanwhile, some LPFM advocates are pushing for other rights for low-power broadcasters beyond those requested by REC Networks.

Dave Solomon, executive director of the Low-Power FM Advocacy Group, said LPFM must become a protected, primary service at the FCC.

LPFM "is the most local broadcast service that can be licensed at the FCC and the only one mandated to be local by the federal government in the application for its license," Solomon said.

The group, which supports the REC

agreement, then the station would only have a pledge for 4 hours a day, where a station authorized 8 hours per day would have a minimum pledge of 2 hours and 40 minutes per day," she continued.

"We need to keep in mind that the other station that shares the channel would be subject to the same requirements so therefore, the public will still receive a minimum of 8 hours per day of local programming on the shared channel collectively among all of the time share partners. Under the current rules, a station subject to pledge and in an involuntary three-way time share [something they did not know was going to happen in their case] would have to present their entire program day as local programming. Even one newscast that was produced from more than 10/20 miles away would put the station out of compliance. The FCC has already made determinations in the past that a mix of non-local programming with local programming does not deplete the localism of a station."

petition and power upgrades for LPFM equal to translator contour rules, also is pushing for the FCC to address the "real-world problems" facing LPFM operators, "namely, the need to be able to broadcast fully enhanced underwriting [commercials] in exchange for emergency, life-saving public service programming. Unfortunately, you cannot get quality emergency public safety programming like local weather, traffic and news without an agreement to broadcast the commercials that come with them," Solomon said.

LPFM-AG has filed its own petition asking the FCC to implement the changes Solomon described.

REC's Bradley said a power bump for LPFM, if allowed by the FCC, would likely require some capital expenditure by LPFM broadcasters. "Many LPFM stations are operating with 300-watt transmitters. However, they are only running with single-bay antennas. Those stations currently need much of that 300 watts in order to put out 100 watts ERP," she said.

LPFM stations would either have to purchase a higher-powered transmitter or switch out the single-bay antenna with a two-bay or a single-element unity gain antenna in order to boost power levels, Bradley said.

NEWSROUNDUP

FM CHIPS: AT&T will include FM chip activation in its device specifications for Android phones in 2016, according to NextRadio and TagStation, the Emmis-owned entities that promote a listening app and station support infrastructure. AT&T will communicate that request to manufacturers to activate existing FM chips in Android smartphones. "The change is made by the OEMs (smartphone makers), and by having the support of carriers like Sprint and AT&T putting it in their specifications it increases the probability of getting the FM chip turned on," they stated in an announcement. "We already have experienced handset makers activat-

ing it across all carriers (for example, new models of HTC One and Moto phones), and AT&T's request fuels the support and progress being made."

MORE CHIPS: The AT&T deal takes NextRadio to another level, said Paul Brenner, point person for that app. Brenner had been negotiating with AT&T for more than a year. He said this contract is notable because of AT&T's volume and influence in both the mobile industry and the regulatory world. He said AT&T has some 120 million subscribers, more than twice the number of Sprint, as well as a larger network. Brenner said he's working on more such deals. Unlike the earlier Sprint agreement, the multi-year AT&T deal does not require broadcasters to pay cash or inventory, a NextRadio spokes-

woman told RW. He called on radio stations to continue running radio spots promoting NextRadio and FreeRadioOnMyPhone.org.

ROZ CLARK: The SBE named Roswell D. Clark as recipient of its Robert W. Flanders SBE Engineer of the Year award. Clark has worked in broadcast engineering for more than three decades and is director of technical operations for Cox Media Group in several markets. He also is a facilitator of SBE's Chapter 39's educational symposium, for which the Tampa Bay chapter received the James C. Wulliman SBE Educator of the Year award.



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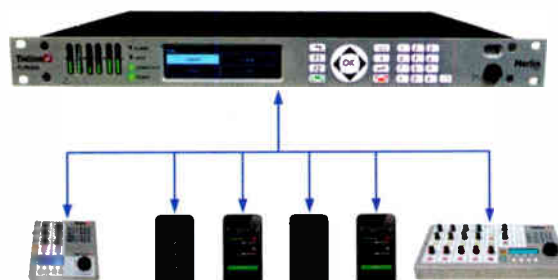
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MINI RADIO

(continued from page 1)

are key, with tools that allow maximum autonomy for the reporter. The broadcaster's goal is that the reporters using the cars are acquainted with all of the functionalities and know how to use them.

Moortgat said there are seven cars in total — five serving Radio 2's regional newsrooms, one car for Radio 2's central services and one for its general radio newsgathering services. They have been equipped with video codecs to allow the transmission of video content. The car used by Radio 2's central services in Brussels has additional video editing equipment onboard for the channel's online feed.

"Another novelty is that the cars are equipped with Internet and serve as an Internet hub, offering reporters identical tools and the same access they have on their workstations at the regional radio center. Connectivity with the VRT's corporate network is bidirectional, ensuring the transmission of data and logistics to the van. The reporter also has access to VRT's i-News newsroom platform, the car is like an expansion

Photos courtesy M. Maes



VRT Radio 2's new newsgathering vehicle sports the station's logo and colors.



The reporter's "mini studio" is located in the backseat of the car.



The wireless mic equipment, DHD core and satellite router are integrated into the trunk.

of the reporter's workplace at the radio station," said Moortgat.

For connection, VRT's Research and Innovation department developed a specific transmission tool that automatically switches to satellite, mobile 3G/4G networks or Wi-Fi hotspots, depending

on the best available network. "The reporter doesn't need to choose a transmission technology and only has to switch the satellite on," said Ward Weis, a VRT Radio 2 technician and regular user of the Radio 2 Antwerp car. "The application allows large volume transfers and live broadcasts under the best possible technical conditions."

Each car is equipped with a gel battery-powered inverter with about three hours of power and an external mains supply connector.

FEWER CABLES

The main challenge for VRT's technical team and the engineers of systems integrator Amptec, the firm that han-

dled integration, cabling and installation of the cars, was finding equipment compact enough to fit into the Mini Coopers.

"We thought about the best balance between functionality, weight and power consumption," said Bart Lamberigts,

Amptec project manager. "Our project proposal was based on a DHD console, a Prodis Prononet IP audio codec, the Vietron Multiplus charger/inverter and the C-Com Ka-75 K drive-away satellite antenna."

(continued on page 12)

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World Radio History

MINI RADIO

(continued from page 10)

Equipped with a DHD 52/DX four-fader mixing unit, identical to those used in its broadcast studios, VRT simplified the use of the mobile studio for reporters. "The big value of the cars and equipment is the ability to go 'live,'" said Moortgat. "But at the same time, reporters continue to have the option to record audio content, edit the file on their laptop with Dalet Onecut software and transfer to the studio."

Live reports are handled with Sennheiser MD 21 and SKM 3072 mics. "The laptops are connected with the console over a USB connection: The console behaves as a USB audio device," said Lamberigts. "USB is also used for the file ingest, between the handheld recorders and the Onecut editing tool. Fewer cables, more compact and 100 percent reliable," he said.

The mini-studio in the back of the car also includes a Fostex 6301D digital monitor speaker and a laptop. "Ninety-five percent of the monitoring is via headphones," said Moortgat. The Sennheiser wireless EM 3031 and



SR 3054 mic receivers/transmitters, the C-Com satellite router, the DHD core, the Prononet, a patch panel and connectors are located in the trunk.

HUB

"We chose the Mini because we needed a compact car for all types of assignments — even with the satellite dish on the roof we can park the car in underground parking garages, which wasn't the case with the Mercedes vans," said Weis. "It's amazing how

much room you have in such a small car."

Thanks to their modular configuration and connectivity, the cars are futureproof, Moortgat feels. "The Internet hub opens up the possibility for additional features — the satellite has a bandwidth capacity of 2 Mbps, scaleable to 10 Mbps. The dish operates via the Ka Band, resulting in higher speed. The current 2 Mbps (symmetric, bidirectional) is sufficient to transfer basic audio and video content to the

studio," he said.

"It is also possible to use the Mini as a hub for a full broadcast of a radio show or event, including audio and cameras."

Moortgat mentioned VRT's new mobile radio studios, currently in the testing phase, for outdoor broadcasts and the transmission of programs produced on-site. Since the studio is very small, one engineer can set it up. "We will mount the studio on a trailer so the Mini can pull it."

Weis first used the VRT Radio 2 Mini Cooper outside broadcast car during national industry union protests in January, where he covered the events for Radio 2 Antwerp. "Each individual Radio 2 newsroom [in Antwerp, Limburg, Brabant, East-Flanders, West-Flanders] decides which assignments will be channeled to the radio car," he said. "Despite its quite minimalist looks and configuration, the Mini is very pleasant to work with."

Marc Maes reports on the industry for Radio World from Antwerp, Belgium. Send us your own stories of unusual radio facility or tech solutions. Email radioworld@nbmedia.com.

NEWSROUNDUP

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RADIO FREE IRAQ: After almost two decades of dramatic change in Iraq — and violence targeting some of its staff — the U.S.-funded Radio Free Iraq signed off in July. "The resources of RFI will be merged with Radio Sawa Iraq to provide the audience with extensive Iraq-specific news and informational programming," according to RFE/RL. "The new Radio Sawa Iraq programming will be broadcast on both its existing frequency and those of RFI during a period of transition." Consolidating RFI with Radio Sawa has been discussed since at least 2012. The planned closure had brought criticisms from some in Congress and among rights groups. The Arabic RFI service was created in 1998.

OVERSIGHT: A number of issues were laid at the doorstep of the FCC in late July at a hearing of a House Energy and Commerce subcommittee. Rep. Greg Walden, R-Ore., shared concerns over "the commission's lack of adherence to a sound regulatory process," including a lack of movement on revitalizing the AM band. Rep. Chris Collins, R-N.Y., said he was concerned by an implication that the FCC does not have "the time and expense" to pursue all pirate radio violators. Chairman Tom Wheeler said the commission had formed an inter-agency working group to address pirate radio and noted the challenges in pirate enforcement.

EMMIS: Emmis Communications promoted Patrick Walsh to president and chief operating officer,



Patrick Walsh

while Ryan Hornaday was named executive vice president and chief financial officer. Founder Jeff Smulyan remains chairman/CEO. Walsh joined in 2006 as CFO and most recently was executive vice president/chief financial officer/ chief operating officer; he is also on the board. Hornaday joined in 1999 and most recently was senior vice president of finance and treasurer. Prior to Emmis, Walsh was CFO at iBiquity Digital and a management consultant for McKinsey & Co. Hornaday worked in the audit practice of Arthur Andersen LLP in Indianapolis. Christopher Rickenbach also was promoted to vice president of finance/assistant treasurer. Smulyan called the changes "a natural evolution in our leadership process."

FCC CLOSURES: The Society of Broadcast Engineers also remains concerned about the administration of FCC field offices. "We are concerned that there is a disconnect between the tenured and very professional field office staff and the commission staff in Washington," SBE President Joe Snelson told Radio World. "Information that SBE has is that the field offices are overworked and understaffed to the point that there is time only to address critical, safety-of-life cases in the field." He made the comment in an online Q&A about the outcome of the commission's cutbacks in field offices and staffs, after an announced compromise.

LPFM: An application for a low-power station by WKMJ Radio Live The People Station Inc. in Pinellas Park, Fla., was denied, the FCC said, because its CEO was found to have operated a pirate station at

one time. The group failed to convince the commission to overturn its earlier rejection.

RICH GREEN: Retired broadcast consultant William Richard "Rich" Green died in June, according to his colleagues Jeff Browne and Dale Harry. They said he began working in electronics at age 12 in the 1940s. He worked in customer service for Paul Gregg at the Elcom/Bauer transmitter plant, where among other tasks, he constructed, tested and installed the WWVH 10 kW transmitters in Kaua'i, Hawaii; he also collaborated with Jim Olver of Jampro Antenna Co. He later formed a broadcast consulting firm and helped with allocation and licensing of many broadcast facilities in California, Nevada and nationwide.

LICENSING: The Radio Music License Committee settled with SESAC and stopped its antitrust suit. The agreement covers radio play of music protected under SESAC's license. The announcement was made by RMLC Chairman Ed Christian and SESAC Chairman/CEO John Josephson.

VOLTAIR: Nielsen measurement as it is defined today is a level playing field, and "nobody should be interfering with that." So said Matt O'Grady, Nielsen Audio executive vice president of local media client solutions, in a conversation with Radio World. He also said planned enhancements to the company's PPM-based system will soon "negate the need" for the Voltair processor. The discussion was on the heels of July's national webinar by Nielsen with clients this week in which it "reiterated its nonsupport" for the controversial product, as we reported last issue. Product manufacturer 25-Seven/Telos declined to comment on the Nielsen remarks.

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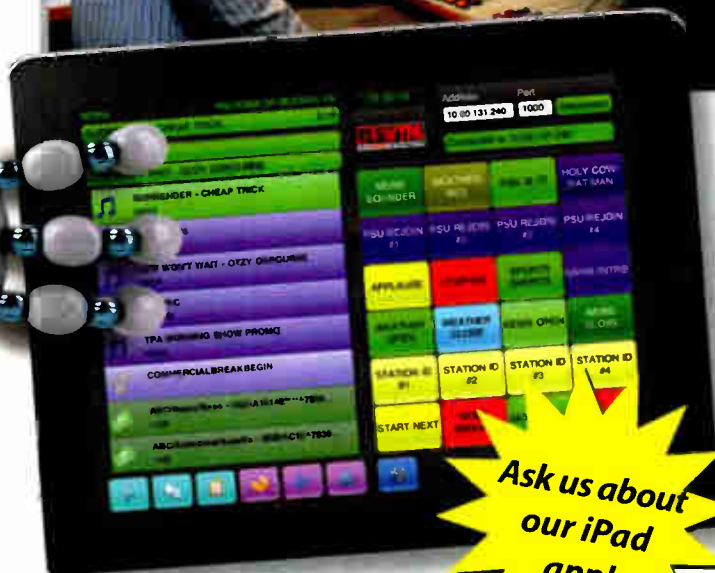


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WORKBENCH

by John Bisset

Read more Workbench articles online at radioworld.com

The broadcast engineering merit badge idea we discussed in July is generating a lot of positive responses, as you will see in future columns.

A story from retired chief engineer Ron Joseph gives insight into what broadcast engineers may endure. This one involves a white and orange lightning rod.

It was a dark and dreary September night in Lynchburg, Va., in the 1970s. Thunderstorms had been predicted all day; now the lightning was popping and the thunder rolling and booming.

Several minutes after the last flash, Ron's telephone rang. It was the station, off the air. Ron headed to the site, arranging for an associate to meet him for safety's sake.

As he drove to the site, he speculated about what may have happened and what might be necessary to get the station back up. The site sat on a mostly

The coax and the AM antenna feed both exited the building and ran on supports about 30 inches above the ground. Lightning, seeking a path to earth, had followed the coax down and made its way to ground by exiting and leaving a nickel-sized hole in the corrugated

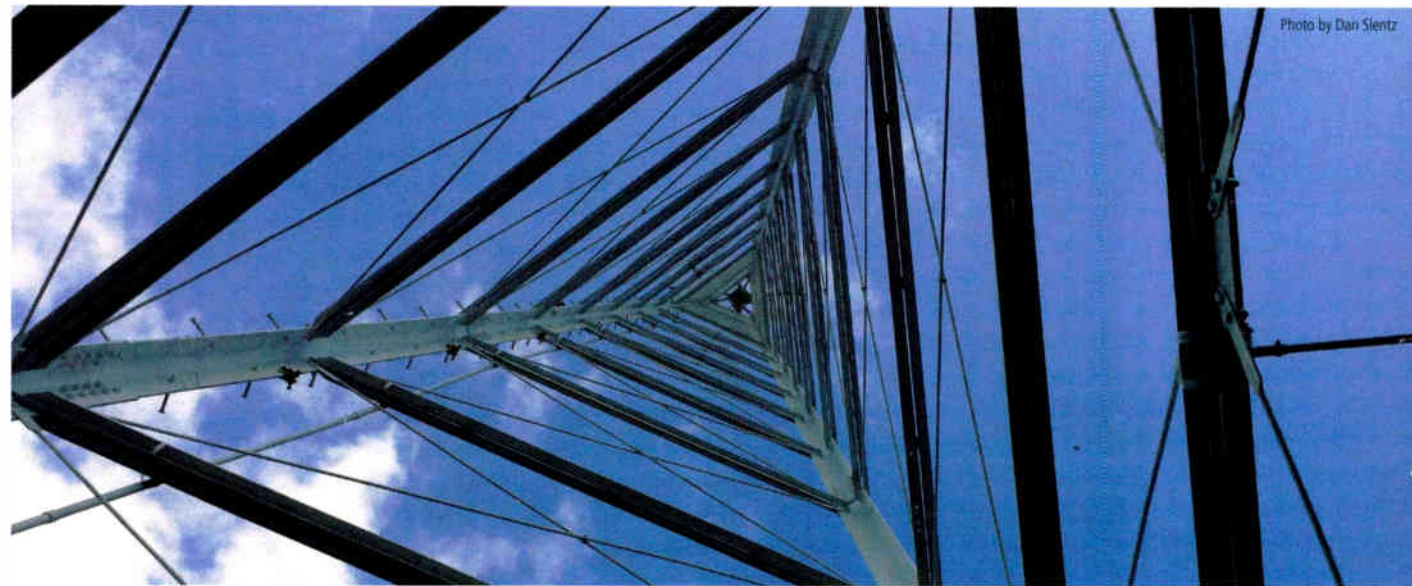


Photo by Dan Slentz

The lightning, seeking a path to ground, had followed the coax down and made its way to earth by exiting and leaving a nickel-sized hole in the corrugated shield.

flat piece of land, with a slight downhill to the transmitter building and fenced-in tower. As he crested the rise and stared at his unlit stick outlined in the nighttime sky, he thought power failure must be the culprit.

Ron entered the building, expecting silence, but was greeted by a strong hissing sound, and it wasn't a snake. The hiss was pressurized dry nitrogen escaping from the FM antenna coax.

shield. With this discovery, Ron suspected it would be a long night. In fact, fixing the problems would take the better part of a month — and raise the hair on the back of his neck several times.

LIGHTS OFF

First, he had to try to get the tower lights back into operation.

Ron instructed the operator/announcer on duty at the station to inform the airport tower that all of the tower lights were out due to the storm.

Then he replaced the tower light cartridge fuses and turned the switch on. Pop! The fuses blew out, so he went to the tower base for a continuity check on the other side of the lighting choke and found a heart-dropping confirmation: The side marker light and top-of-tower beacon wiring all indicated a short. Furthermore, the wiring also shorted to

the angle frame of the tower itself!

How much more damage could one lightning strike cause?

By that time one of his contract engineers had arrived, with a propane torch and some large-diameter solder. While his associate cleaned and closed the hole in the FM feed line, Ron attempted to fire up the FM transmitter. The errant lightning had managed to do damage even here; it had shorted out power sup-

ply diodes that took an hour to replace. Thankfully, this was the extent of the damage to the FM transmitter.

Even though the AM transmitter had not been on during the storm, Ron wanted to be sure it was okay for the next morning. It wouldn't come on. His investigation showed that the many top-hat diodes comprising the LV power supply had shorted. How did lightning get in there?

Fortunately, Ron had purchased spare plug-in legs for this bridge power supply unit, so it was quick work to swap out the diode bridge. He tried the AM again; it worked and made full power.

As strange luck would have it, all of that lightning jumping around in those transmitter cabinets had not found its way into the equipment racks; hence the audio processing remained operational. Telco audio circuits from the studios to the transmitters also were undamaged.

The hole having been repaired in the FM feed line, Ron opened the valve on the dry nitrogen tank and pressurized the line, having no idea if there were additional holes along the "run" up the tower. As he and his associate cleaned up and rebuilt the blown diode stacks, they closed the valve and kept check on the pressure gauge. Over a couple

of hours, it did not move even a half division.

MORE DRAMA

The next morning, you would never have known that a storm had blown through. A bright, sunny, cool day greeted Ron's trusty tower contractor, a one-man operation like many at the time; he headed up for an inspection.

Returning to the ground a couple of hours later, he reported seeing a couple of places where the lighting cable looked burned and "welded" to the

tower. He had pulled it away from the tower in one place and it had come in half, so the lighting power cable would have to be replaced. Even though the tower was equipped with a rod to take lightning hits and protect the beacon, lightning had completely destroyed the beacon and cracked all of its clear glass, blown the metal top off and smashed the top red filter.

For reasons of both aviation safety and liability, Ron opted first to have the contractor replace the lighting wiring and get the side marker lights working.

The day to install the new beacon dawned sunny, with just a slight breeze. The contractor had the beacon ready to hoist. Pulling it up seemed to take forever. Eventually, the new beacon reached the top; but now the climber was shouting something from his perch. It was difficult to make out words coming from 320 feet in the air. (It later occurred to Ron that they should have had two-way radios.)

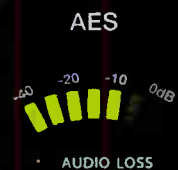
Ron saw the climber pointing and waving and shouting. After about a half hour of this pantomime, Ron made out that the climber was pointing to a cloud that Ron could not see from the ground. The climber was worried about

(continued on page 18)



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For the entire story... INN25.wheatstone.com

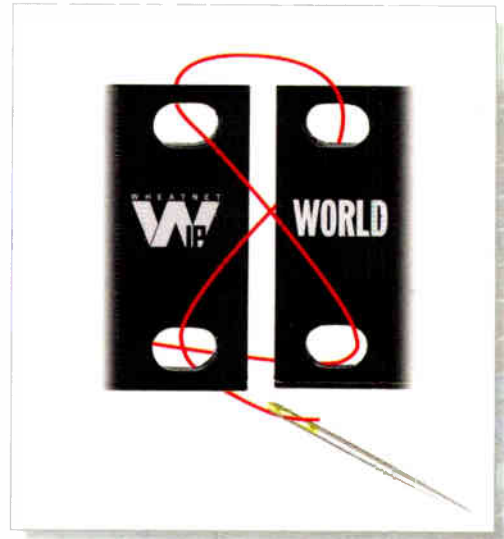


ACI: It's Wheatstone's DNA Needle and Thread

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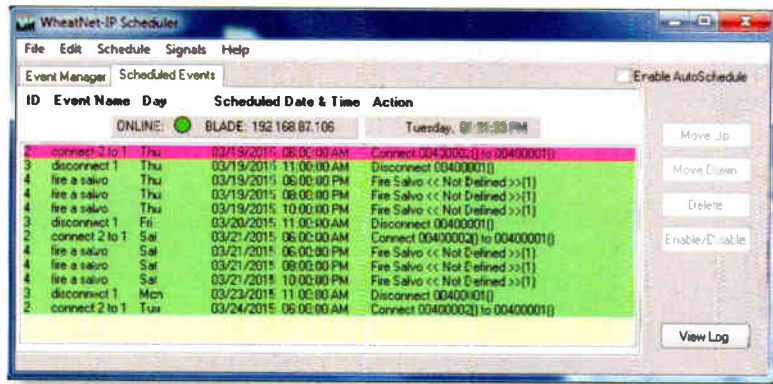


Life on the EDGE: STL via IP Microwave

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Leslie Caraccilo

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**Larry Sprinkle, WROQ(FM)/
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Nikki Nite

Entercom

Tapped as VP of programming and operations in Austin



Pete Booker

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Kenny Day

iHeartMedia

Fills newly created position of SVP of political sales and strategy

Joe Mackay

The Spanish Broadcasting System

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Hayden Green

Cumulus Media

Promoted to operations manager for Fort Walton Beach/Destin, Fla.

David Yadgaroff

CBS Radio

Named new senior vice president/Philadelphia market manager

Kevin LeGrett

iHeartMedia

Now serves as Los Angeles market president

Jeff Miller

Entercom Communications

Hired as vice president/general manager of SmartReach Digital



Carter Brokaw

iHeartMedia

Chosen as president of digital revenue strategy

Mike Dabbs

Federal Communications Commission

Appointed as director of the FCC Office of Legislative Affairs

Dave Lougee

NAB Board of Directors

Tapped as Joint Board chairman, taking over for Charles Warfield



Leslie Slender

Cumulus Media

Named VP of Brand Partnerships and Events

Ricardo "Gonzo" Otero

iHeartMedia

Will lead Hispanic Brand Management team

Send information to radioworld@nbmedia.com with *People News* in the subject field.

WORKBENCH

(continued from page 14)

a storm coming.

Now he stopped waving and shouted down "I'm scared!" The hair on the back of Ron's neck rose up. Ron shouted back: "You want to come down?" The climber shouted back, "I can't. I'm scared!"

What do you do when you have a frightened climber atop a big lightning rod, a storm approaching, a beacon that has begun to swing in the breeze and nobody else around to grab on to it? You might call the fire and rescue department, but that didn't occur to Ron at the time; and now the tower guy was shouting: "Get me some help!"

Ron remembered that another tower contractor had stopped by the station looking for business a couple of months earlier, and had said if Ron ever found themselves in need of a new tower company, he would like to be considered. Ron called and was relieved when the contractor answered the telephone.

"Calm down," the man told him. "He's frozen from fear on that tower. He probably has his safety belt attached and out of fear he's holding on tight. There's no chance he will turn loose. You will be able to find his finger prints in the metal. I'll come get him off the tower, if you want."

Ron wanted.

The second contractor came, checked the tied-off rope, declared it fine and headed up the tower. When he reached the top, the new man began assuring the first that he would get him down safely.

The next day, the first tower climber headed back up the tower to install the new beacon.

About half way up he paused for an unusually long time. From the side of the tower between the level of the first and second level obstruction lights, he called out: "I see clouds." He stayed there for a few minutes and then headed back down, apologized, saying he was afraid the same fear might overcome him again and he just couldn't do it.

Sadly, as Ron understands it, the contractor never

climbed again.

In the ensuing years, Ron left the radio broadcast business and has since retired from a second career. But his first love, radio, remains with him today in retirement. A broadcast engineer never knows what curve Mother Nature will throw.

Among the lessons in the above, for all troubleshooting situations: Think clearly. Don't jump to conclusions. Handle problems one at a time. And buy some two-way radios.

Find many useful tips in our archive. Click on *Workbench* under the *Columns* tab at radioworld.com.

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 46 years in the broadcasting industry and is still learning. He handles West Coast sales for the *Telos Alliance*. He is *SBE certified* and is a past recipient of the *SBE's Educator of the Year Award*.

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Set communications boundaries and use phone calls to your advantage

I am astounded and disappointed at the quantity of email, text messages and phone calls I receive from people who — allegedly — are on vacation.

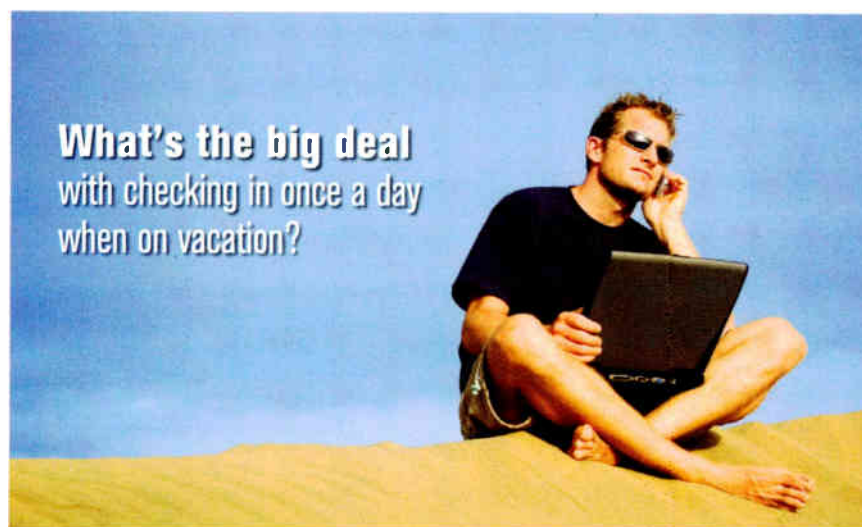
Our 24/7, always-on broadcast industry contributes to our always-working neuroses, but we are not alone in our non-stop compulsion to work. This is a massive infection, crossing industries and creating mass anxiety in its wake.

How did we ever accept the expectation that we are always just a few minutes from answering any inquiry — no matter how small? It happened gradually. In the mid-'90s most of us were either blessed with, or cursed by, the arrival of email. This was the start of some serious after-hours two-way communication. Even in 2007 when Apple released the first iPhone and in 2008 when Android took the world by storm, we were innocent to the notion that handheld devices would soon extend the workday until bedtime and, for some, into the night.

Because this is rarely discussed — let alone debated — in the workplace, we are caught in a dilemma that has spiraled out of control. Colleagues have expressed to me that if they don't answer an after-hours email or text from work within 20 minutes during the week, they are viewed as unresponsive — even on weekends.

TRULY ON CALL

To be clear, I am not referring to our comrades who live in the news cycle. Sorry friends, but when you signed up to



be on the cutting edge of breaking news, you joined the ranks of those special people who, by the nature of what they do, must be hard-wired to the beast.

Also, there is no question that the majority of engineers are always on call — but that should really be a *call*, not an unending obligation to check email.

And both of these categories of workers do share an essential element with the rest of humanity: You, too, should take a real vacation.

When you choose to respond to every communication while on vacation — whether in one-, two- or six-hour cycles — you are demonstrating to those closest to you that your work is more important than they are. When I pointed this out to a close friend recently, he told me that

he responded to emails “only” once a day when he was with his wife and kids. When I asked him why, he responded that by not checking he'd have too much to do when he went back to work.

Nice try, Superstar, but you get no pass from me. I know you'll find this hard to believe, but most things will get solved without you for five whole days. When you get back and go through your email you'll discover that the people you work with actually know what they're doing and can problem-solve. If they can't, you've got larger problems.

What's the big deal with checking in once a day when on vacation? Your mind moves out of relaxation mode and plunges you back into work. So what's the solution to staying in touch while

PROMO POWER



Mark Lapidus

on vacation? Simply tell people you will not be checking your email or texts for that week. If they face an emergency that only you can solve, they can pick up the phone and call you. While nearly everyone at work will send you an email with their eyes closed, almost nobody will actually call you because they first have to think about what qualifies as truly urgent. For example, I have rarely actually witnessed a marketing or sales emergency.

I've mixed two issues here. One is taking an actual, battery-recharging vacation; the other is setting limits on after-work communication. While it's easy to be definitive regarding vacation, setting boundaries for the workday is perhaps even more important and requires first a discussion and then an agreement. The initial step is getting people to understand the difference between communicating a vital issue as opposed to emailing or texting an ordinary request that can wait until the next day.

Besides, when it comes to important matters, I am still a big fan of the telephone. Whether it resides on my desk or in my pocket, having an actual conversation on the phone is fast and rewarding.

But after hours or on vacation? Nights, weekends or on vacation — gimme a call at 867-5309.

The author is president of Lapidus Media. Contact him at marklapidus@verizon.net.



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Podcast Explores “Radio That Matters”

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PODCASTING

Radio Survivor is a news blog “about radio’s present, past and uncertain future.” Radioworld.com recently asked Radio Survivor co-founder Paul Riismandel about the Radio Survivor podcast, which launched in June; here’s an excerpt of our online Q&A.

RW: What motivated you to dive into the world of podcasting?

Paul Riismandel: One of the great things about podcasting is that it lets

made up of people who love radio, whether they are producers or listeners. We construe radio broadly, so this includes Internet radio and podcasting as much as broadcast. We tend to highlight community and college radio.

I hope that the podcast broadens our audience. In particular, I’d like to see us reach people — especially younger listeners — who have been attracted to radio by the surge in attention to podcasting.

RW: What type of technology are you using to produce the podcast? Do your

similar to the YouTube player.

RW: How will you determine if your podcast is a success? Are there specific metrics that you will use?

Riismandel: One important metric is feedback and engagement ... We hear from the community all the time via social media and email. I hope that the podcast is another platform that encourages interaction ... If the Radio Survivor community grows and becomes more interactive over time, then that is an indicator of success.

Obviously, I’ll be paying attention to download and listening statistics. I’m realistic in my expectations because I know we’re covering a niche subject, and there are a lot of podcasts out there, so discoverability is always a challenge.

RW: Anything else you think RW readers would be interested to know?

Riismandel: As we get some more episodes under our belt, I’d be interested in creating a version suitable for noncommercial stations to broadcast. However,



Paul Riismandel

since the show originates as a podcast, right now we’re not adhering to a strict clock. So preparing the show for broadcast will require a little more work each week. But if there are stations interested in airing the show, and even helping us with the editing, then we can make it happen.



Courtesy Paul Riismandel

Jennifer Waits, Eric Klein and Paul Riismandel, from left, work on the podcast.

you reach people in places and at times when they can’t be reading a website ... A podcast provides an opportunity to reach new audiences who may not encounter our website but who can find our show on iTunes, Stitcher or SoundCloud, or learn about it by word of mouth.

RW: Can you tell readers about the content of your episodes?

Riismandel: On each episode, we will review some important radio stories from the week, and Jennifer [Waits] will give an overview of news from the world of college radio. There will also be a feature, which may be an interview, a look at a particular station or program, or a deep-dive into a particularly vital issue. We’ll always wrap up with a short commentary from Radio Survivor co-founder Matthew Lasar.

RW: Who is your target audience?

Riismandel: Our website audience is

radio backgrounds influence these choices?

Riismandel: For the main part of the show, my co-host Eric Klein and I record in my home office in Portland, Ore., using two studio condenser microphones and a small Behringer mixer I’ve been moving around for about a dozen years. I digitize this using a PreSonus AudioBox 22VSL USB audio interface directly into my MacBook Pro using Adobe Audition for both recording and editing. To bring in some guests, we’ve been using a nifty new smartphone app called Ringr which effectively does a “double ended” interview recording.

RW: Can your listeners stream episodes, or do they have to be downloaded?

Riismandel: Episodes are available to stream via SoundCloud or for download, to give the listener maximum flexibility. I like the SoundCloud player because it is easy to share and embed,

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JK AUDIO ADDS TO REMOTEMIX LINE

Building up its RemoteMix line of portable field mixers, JK Audio has developed the x4 and x5 (shown) models. The company sees these as useful as a front-end mixer for POTS, ISDN, IP, smartphone or laptop codecs in remotes, news and sports coverage.

Both models share many of the same features: four-channel, XLR mic preamps, 48 V phantom power, 120 Hz low-cut filter, four 1/4-inch headphone jacks with individual source selector and level controls, 3.5 mm send/receive and 3.5 mm wired headset input.

The x5 adds a 24-bit USB codec, AES digital output, soft peak limiter, 1 kHz tone generator and XLR headphone cue input.

JK Audio estimates battery life for the two 9 V batteries to be greater than 10 hours for the x4 and greater than eight hours for the x5.

Info: www.jkaudio.com



AUDIOARTS' SPIRIT OF 76

Console-maker Audioarts has a new digital offering, the D-76.

The model is available in 12- or 18-channel frames with four main stereo busses. It can mix analog or digital inputs, depending on the interface card used. Each digital channel offers a sample rate converter. Overall native sample rates for the mixer are 44.1 kHz and 48 kHz.

Additional standard features include built-in headphone amp, cue speaker, LED bargraph meters, digital timer and clock. StudioHub+ is used for connectivity.

Audioarts says the overall design is part of a new, "sleek" look.

WheatNet-IP connectivity is optional, as are a backup power supply, additional mic preamps and Superphone dual hybrid.

Info: audioartsenineering.com



NEWTEK ADVANCES TRICASTER

The TriCaster all-in-one video platform is receiving an across-the-line upgrade from NewTek.

Labeled TriCaster Advanced Edition, the optional package can be used with everything from the TriCaster Mini through the TriCaster 8000.

The company says, "More than 60 new major capabilities and enhancements in TriCaster Advanced Edition help multiply audiences, streamline repetitive tasks, and make productions more riveting in an ever-more-connected world."

New items and capabilities include "automated real-time data-driven graphics, new IP workflows, advanced automation, multiplatform streaming, social and Web publishing, terrific in-show replay features, enhanced multimedia mixing, sophisticated production elements ..."

The graphics upgrades also provide additional information such as sports scores, weather updates, business reports, election results and social media feeds. Other additions include a pre-visualization tool for transitions, in-show replays, improved sound and video editing tools and improved graphics processing power.

Info: www.newtek.com



DB BROADCAST RELEASES TRANSMITTER REMOTE APP

The Mozart Wi-Fi Touch from Italian firm DB Elettronica is a Web app that allows the remote control of the firm's FM transmitters.

Designed to ease the management of equipment that is located in hard-to-reach areas, such as transmission sites where dust, humidity and high temperatures are often present, the Mozart Wi-Fi Touch features advanced software able to guide users through all settings, says the company, providing instant access and control of the specified system via a smartphone or tablet.

Mozart Wi-Fi Touch can be installed on both Apple and Android devices, and allows operation via SNMP, the Web, GSM and SMS.

Info: www.dbbroadcast.com

REMUS HELPS TOWER BEACONS

It's a problem not readily obvious to most broadcasters: obscured or partially obscured tower beacons.

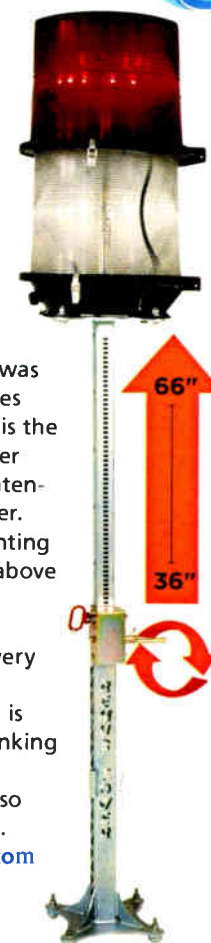
Jared Remus of Remus Tower Service came up with a simple solution: An extender.

A release explains: "The development of the patented RTS 36-66 was driven by two key regulation changes within the tower industry. The first is the FAA regulation prohibiting the tower beacon to be located behind the antennas surrounding the top of the tower. The second was an OSHA act preventing work on any object over 36-inches above the structure of the tower."

The RTS 36-66 is made of zinc-plated steel. It has locking points every 6 inches. The device is 36 inches tall and extends to 66 inches. Extension is motivated by a removable hand cranking device.

Remus is a tower worker himself, so the product derives from experience.

Info: www.remustowerservice.com





OMT LAUNCHES ENTERPRISE FOR IMEDIATOUCH

OMT Technologies has launched iMediaTouch Enterprise, the latest iteration of its iMediaTouch automation system.

According to OMT, Enterprise incorporates "a new SQL-based content management system and an innovative new customizable on-air user interface" designed for "application interoperability, and sharing of content, programming and resources across the radio enterprise."

Other Enterprise features highlighted include a customizable interface with user profiles with multimonitor capability and full 1080p HD resolution; real-time content management system SQL backup and other redundancies and compatibility with Axia and Wheatstone audio over IP nets.

Info: www.imediatouch.com

DAS OFFERS MULTILINGUAL OPTION

The DASDEC OmniLingual Alert Module software from Digital Alert Systems gives the company's DASDEC emergency messaging platform enhanced multilingual alerting capabilities for EAS alert text translation, as well as text-to-speech in a variety of languages.

Languages include Spanish, Portuguese, French, German, Italian, Polish and Lithuanian; the company says that it is working on supporting further languages.

According to the company, DASDEC was the first EAS device to introduce English and French language support in Canada. The OmniLingual Alert Module enables automatic alert translation from conventional EAS or Common Alerting Protocol (CAP) sources, and the user can select one or more languages for EAS text display and TTS audio conversion and output.

EAS-NET is Digital Alert Systems exclusive communications protocol software enabling EAS data and audio transmission over a TCP/IP network for up to eight EAS-NET compatible platforms. The firm explains that devices using EAS-NET are able to exchange EAS message data and audio between devices for communicating and disseminating EAS events to viewers, listeners, or subscribers.

Info: www.digitalalerts.com



BEHRINGER DOES THE SPLITS

For the ambitious station building out a performance space, Behringer is now shipping the Ultralink MS8000.

The MS8000 is an eight-channel-in/16-channel out microphone splitter. It generally splits each channel on a one-two basis but using a channel link function a single input could be split into four outputs. Each input channel has a ground lift button. All connectors are XLR.

Info: www.behringer.com

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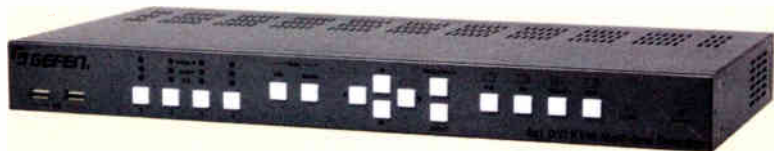
GEFEN MASTERS MULTIPLE COMPUTERS

Interconnect box specialist Gefen has a new box out that might be of interest to engineering and IT personnel faced with monitoring many computers throughout a facility, a 4 x 1 DVI KVM multiview switcher (EXT-DVIK-MV-41).

The 1 RU box provides outputs for two DVI monitors along with inputs for keyboard and mouse. Up to eight boxes can be daisy-chained for a total of 32 computers slaved to one workstation. There are four source DVI input banks per box. Each bank has a USB port, mic and speaker audio inputs.

Main video output is up to 1,920 x 1,200/WUXGA. The box provides a number of viewing options such as picture in picture, quad view, etc.

Info: www.gefen.com



TEAC SPINS BELT-DRIVE TURNTABLE

When was the last time you saw a belt-drive turntable introduced? One that didn't cost as much as a mortgage payment?

Take a look at Teac's TN-200. This is a two-speed model, 33 1/3 and 45 rpm. It offers standard RCA consumer outputs and a USB output. An onboard preamp for the RCA outputs provides a line-level signal. There is also a phono EQ.

The platter is aluminum and the body composite wood for stable performance. A straight tonearm and anti-skating design add to the surety of playback. It ships with a replaceable moving magnet cartridge.

Info: audio.teac.com



OLSEN IS BLOWING AWAY THE WIND

Olsen Audio Group's WindTech division, specializing in windscreens and pop filters for microphones, has announced new windscreens, the 10378 and 10380.



The latest utilize a higher grade of SonicFoam. This high-density S80 foam has been used in military applications, in headsets for soldiers and pilots. It has a Carnauba wax water-wicking feature.

A release notes that "all models are designed for use in high wind applications for lapel, lavalier, headset and condenser type microphones and offer up to 20 dB of wind noise protection." According to WindTech, the windscreen should be frequency-transparent.

Made in U.S.A. of formaldehyde-free polyurethane foam.

Info: www.windtech.tv



DIGRAM DELIVERS NEW IQOYA *SERV/LINK

Digigram announced an update to its Iqoya *Serv/Link multichannel IP audio codec, now in a 1RU unit that is able to support up to 64 stereo channels.

The more compact model allows users to send multiple audio programs simultaneously to a variety of destinations with a single piece of equipment.

One-third the size of earlier models, the box is available with analog and AES/EBU I/O (up to eight stereo analog I/O), AES/EBU-only I/O (up to 16 stereo analog I/O), or MAD I/O (up to 64 stereo analog I/O).

It also features up to 16 RS-232 ports and 16 GPIOs for auxiliary data tunneling, explains Digigram.

The Iqoya *Serv/Link provides multi-format encoding and multiprotocol streaming of each input. It also enables the decoding of multiple audio programs, giving users the option of defining three decoding priorities for each program, including sound files and playlists, the company adds.

Info: www.digigram.com



REDDING DISTRIBUTES SCHOEPS HEADSET

Retailer and distributor Redding Audio has added a new headset from Germany's Schoeps to its distribution offerings.

The HSC 4VXP matches a Schoeps CCM 4VXS cardioid microphone with Ultrasonie HFI 680 closed-back headphones.

Schoeps says that the mic "offers a steep bass rolloff and a mild high-frequency boost. It is designed for lateral sound pickup at the shortest possible distance, i.e. directly in front of the speaker's mouth. Proximity effect compensates for its low-frequency rolloff such that the microphone has an even frequency response for the person speaking, while background noise encounters the full response rolloff and is greatly reduced."

The opposite-side earcup can be rotated away from the ear. A swappable B5 pop screen is included.

Info: www.reddingaudio.com

ELECTRO-VOICE LENGTHENS INTERVIEW MICROPHONES

Microphone maker Electro-Voice has announced the release of extended length "L" models for select microphones.

The well-known broadcast veteran 635 and the RE50 dynamic interview/field production microphones will be extended to 9 1/2 inches in length.

The 635 will be available in beige (635L) and black (635L/B) while the RE50 will be available in black (RE50L) and black with a neodymium capsule (RE50N/D-L). Prices: 635L — \$249; 635L-B — \$249; RE50L — \$319; RE50N/D-L — \$335.

Info: www.electrovoice.com





Featured Program: Microwave Pro

V-SOFT RELEASES MICROWAVE PRO 2

Radio frequency propagation analysis and measurement software developer V-Soft has a new version of its Microwave Pro microwave frequency allocation and path analysis program. The program is useful for Broadcast Auxiliary Services, Part 101, COALS and CARS projects, according to V-Soft.

New to Microwave Pro 2 is the usage of the NSMA OH loss model, the industry standard, the company says.

The program will calculate C/I ratios that consider terrain obstructions, plots terrain profiles of all protected and interfering paths, provides a map showing the geometry of protected and interfering paths.

Newly added is a point study that allows users to analyze specific trouble spots such as wind farms and calculate their prospective impact on microwave paths.

It performs frequency searches for the part 101 and the broadcast auxiliary frequencies and will provide all elements for prior coordination mailings to affected licenses.

Info: www.v-soft.com

DHD 52/TX FEATURES FLEXIBILITY

DHD has released the 52/TX, a tabletop control surface/utility mixer designed for news desks, editing suites and SNGs.

The mixer is dominated by a 10.1-inch touchscreen display, two assignable potentiometers and six programmable hardware buttons. It is particularly suited for small applications.

With a dedicated microphone input, head-phone output, talkback mic and loudspeaker, the company says that the 52/TX is always ready for telephone interviews and dubbing, and also serves as a talkback unit or monitoring controller.

With the Toolbox8 configuration software users can create an individual mixer layout as per requirements. It's possible to define number and size of faders, buttons, functions and peak meters to show signal levels.

The 52/TX can be used with any of the current DHD DSP cores as a standalone mixing console or as extension of a larger DHD system.

Info: www.dhd-audio.de



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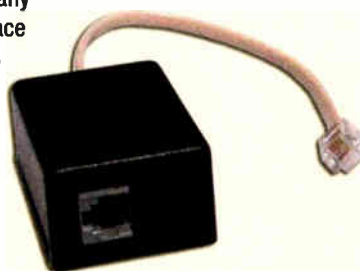
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Looking for a broadcast excerpt of a San Francisco Giant's taped off of KSFO radio from 1959, interviews with Willie Mays, Dusty Rhodes & some play by play excerpts, also features a homerun by Willie Mays and Felipe Alou stealing second base, running 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.

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Talkback: Readers Have Their Say

The following comments were posted to radioworld.com in response to stories that appeared on the website or in print.

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FM CHIPS ON AT&T ANDROIDS

About the story "AT&T to 'Light Up' FM Chips in Android Phones" (radioworld.com, key term "Android phones"):

Finally!! Looks like I'll finally be switching from Verizon to AT&T after 18 years with them. By[e] Verizon. Hello AT&T in 2016!

With iHeartRadio who needs a radio? To use the radio you require headphones. No one needs that features.



Isn't it time to use the power of us "consumers"? I [bought] my newest smartphone, LG G3, only for the reason that it have an

FM-radio, instead of some of the newer Samsung models.

What about the rest of us, with iOS phones? More than half of smartphones are Apple-based, so until Apple gets on board with embedded FM radio chips, it's a half-hearted effort at best.

I could imagine one carrier excuse being concern over the FM chip L.O. interfering with one of the cellular bands (intra-device self-interference). In reality it's a public safety benefit to enable the FM chip. Even with newer broadcast data/text capabilities of the wireless networks, in a crisis having the supplemental or primary FM voice

IMO, Verizon, with its superiority complex, and love of charging for every bit and byte of data, will likely NOT activate FM chips until an FCC mandate comes down, and then it will take them 4 years to implement it (based on my crystal ball guess). I'd bet money in Vegas on that move, despite AT&T's announcement of cooperation today. Good for AT&T.

I deactivated the FM radio in my phone because it got such bad reception.

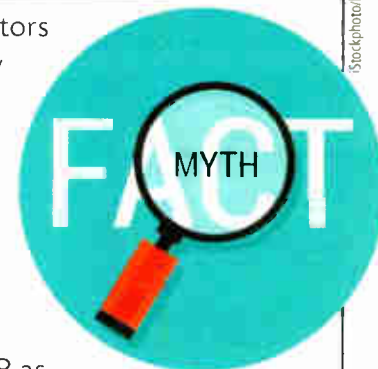
CONSERVATION

About "WHGM Waits on Ospreys Before Expanding FM Signal" (radioworld.com, key term "osprey"):

LOW-POWER PHILOSOPHIES

About "Let's Set the Facts Straight About LPFM" (RW, Aug. 1):

It does seem ridiculous that FM translators and LPFMs are held to two exceedingly different signal allocation standards/systems, especially since the LPFM is more restrictive despite being – by law – more in-line with the FCC's professed preference for greater "localism" in broadcasting. I'd say simplify the FM translator allocation schema somewhat (eliminate the maximum ERP as determined by a particular HAAT along a particular azimuth) and make the rules for west and east of the Mississippi the same (eliminate the east, make the west the standard for the whole country). Then give the same rules to LPFM. FWIW, I disagree moderately with allowing LPFMs to operate as commercial entities. Either you're a non-comm or you're not, and if you're not you are subject to spectrum auctions. ... I also disagree strongly that LPFMs be allowed to fund-raise for entities other than themselves. ...


Stockphoto/bakhar_zen

FCC FIELD CUTBACKS

About FCC field office reductions, as covered in various stories like "Industry Roundtable Offers Guidelines to FCC to Combat Pirate Radio" (radioworld.com, key term "combat pirate"):

Have you written your congressmen and senators, requesting that the federal budget include full funding to keep all the field offices open and staffed, and forbid transfer of that funding for any other purpose?

Those in the field doing the real work should not be micro-managed. They should be fully supported and given the equipment they need to properly do their work.

Whether they went with the original cuts or the reduced set of cuts, the move was among the dumbest that Uncle Charlie has ever made.



A humorous composite created by law firm Fletcher Heald & Hildreth makes a visual reference to FCC "tiger teams."

Thanks to Jeff Davis for making a responsible and humane decision!


Stockphoto/Elena Belous

READER'S FORUM**UAVS VS. MODEL AIRPLANES**

Read the article about "drones" in the June 3 edition.

I have been flying model airplanes since the age of 7, joined the Academy of Model Aeronautics in 1986, and began to compete in radio control aircraft precision aerobatics around 1990. Won several competitions and plenty of bling for the "me wall." That was all back when you had to build your own models, and you really had to learn how to fly.

When the lightweight digital cameras came around in the early 2000s, I fitted one to a large radio control airplane for the purpose of doing tower light and antenna inspections on FM towers. Using a very lightweight model airplane with a low wing loading, I was able to slow the plane down enough to get very detailed (at the time) images of tower structures, antennas, etc. With a steady headwind, I could nearly hover the model and get closer shots of specific details. This required tremendous flying skill to keep from damaging the models or the objects being observed. I never had an incident.

A number of years ago, the technology for FPV (First Person Point of View) became affordable and light enough to attach to a larger electric powered model airplane. In recent years, we have seen a tremendous rise in use of multi-rotor radio controlled aircraft, what people now call simply "drones." The multi-rotor radio control aircraft are usually equipped with on-board stabilization, GPS, etc. to make them easily flown by people with little to no skill in piloting radio controlled aircraft. This has paved the way for nearly anyone to fly one with success.



Paul Shinn's passion for flying model airplanes started at an early age and continues today.

Using radio-controlled models to inspect towers, etc. is not new. It's just now starting to get a lot of press because they are affordable and anybody can fly one. The AMA has been pushing the FAA to not impose restrictions on model aircraft, and there is still no real resolution to the issue of the federal

government lumping all model aircraft in with the drones. As more and more people buy and fly multi-rotor aircraft, and do so irresponsibly, it creates a real problem with the way the public sees "drones" and their usefulness. It is my sincere hope that all multi-rotor aircraft pilots would do so responsibly and safely. Especially when it comes to flying over people or property, like broadcast facilities.

Meanwhile, there's nothing as relaxing as sitting back and hunting for thermals with a radio-controlled glider on a beautiful weekend. No multi-rotor "drone" can match that.

*Paul Shinn
Chief Engineer
KVML(AM)/KKBN(FM)/KZSQ(FM)
Clarke Broadcasting
Sonora, Calif.*

DEBATING CLASS A

I would like to defend Class A stations and even suggest that power increases should be granted to overcome a lot of the electronic hash that seems to impede clear reception. ("Littlejohn: Retain Class A Protections," July 1.)

I grew up in northern Michigan, and listening to the big kilowatt factories out of Chicago, New York and Boston was a joyful nighttime ritual. The quality of the programming was superior in content and diversity. But most of all it was dependable. Traveling by automobile was also enhanced by powerful stations that you could receive, even if you had long distances to cover requiring several hours behind the wheel.

The state of local AM radio is none of that. Most of these local stations appear to be automated, with no operator and no one who can respond when the audio is dropped and only an unmodulated carrier is left.

There have been cases when the automation got stuck and played a five-minute stop set of commercials over and over for more than an hour. Another time the local sequence was out of sync with the satellite feed and the two audio streams played on top of each other.

The worst problem was a brush fire that had erupted on a Saturday afternoon. The sky had turned red with smoke, breathing was difficult and the situation became increasingly severe over the course of several hours. The two local news/talk stations were plugged into satellite programming, and the three local TV stations seemed to be unaware and didn't display even a news crawler on the screen. When you call the stations, all you get is an answering machine.

Another instance of non-service from local radio was an evening when we were plunged into the dark at about 8 p.m. Local radio stations were silent; evidently they have no backup generators. I didn't have a battery-operated TV, so I didn't know their status. I monitored the ham radio repeaters (they do have backup power) and local hams were able to get reports from other operators and determined within 45 minutes that a two-county area of central California was affected. In another 30 minutes, they relayed information from PGE with an estimate of a few hours before power could be restored. It was two and a half hours before KNX broke in with a bulletin about the situation. Thank goodness for a Class A in Los Angeles. These stations are needed. Let's keep them. Let's increase their power.

I remember the words of an FCC chairman who famously (maybe infamously) said that he would keep issuing licenses "until the last station couldn't stay on the air." Well, we have come to a point where there seems to be dozens of stations that are on that brink and have cut back staff and engineering budgets and their only contribution to broadcasting is cluttering up the spectrum and causing interference to each other, besides competing for the available advertising revenue.

Jan Lipski

Owner

*Jay Alexander Productions/Consulting
Lompoc, Calif.*

Upon reading the interview with Mr. Jeff Littlejohn of iHeartMedia, I just shook my head in disappointment. Of course, the EVP of engineering at iHeartMedia is going to argue against any compromise to his group's 17 Class A signals coverage. That is a foregone conclusion.

I differ with Mr. Littlejohn, though, as I believe that what is good for the whole of AM radio stations in the USA isn't necessarily good for all radio stations, especially the Class As.

Many of today's 1, 5 and 10 kW local AM stations are near extinction as the out-of-town or out-of-state Class A stations' signals take away local listeners. The ability of large radio groups to afford syndicated programming that steals away local listeners, essentially takes money out of the pocket of local mom and pop stations.

For some stations, the ability to have a 24/7/365 signal can mean the difference between prosperity and extinction. However, these stations are forced to operate with extremely low power or no night signal just to protect the skywave of a station nearly 1,000 miles away. I can only imagine the local events, sports games, weather and emergency warnings that could benefit a local audience, if the protection of Class A stations were no longer an issue. (After all, in some markets you can hear Rush Limbaugh on several different spots on the dial simultaneously.)

I say that 10 kW should be the nighttime maximum for any AM station, and protections should be revised for the benefit of the local stations that have suffered for the past several decades.

Dave Dybas

Owner/Engineer

*Sparks Broadcast Service
Buffalo Grove, Ill.*

WRITE TO RW**SEND A LETTER TO THE EDITOR:**

Email radioworld@nbmedia.com with "Letter to the Editor" in the subject field. Please include the issue date.

READER'S FORUM**LPFM SUGGESTIONS**

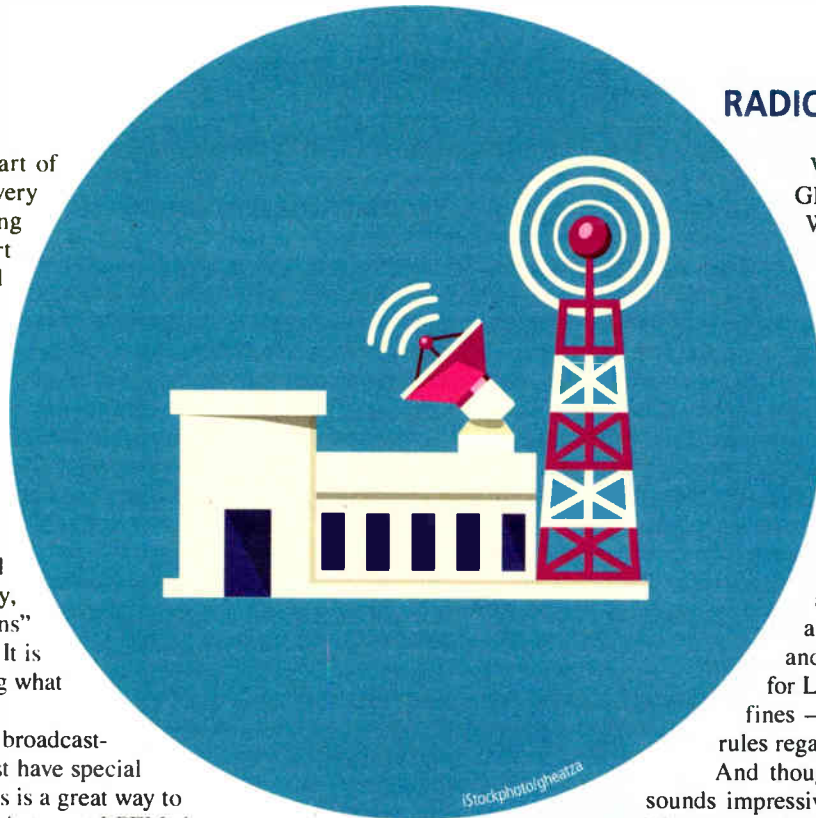
They may be small, but LPFMs are a part of the broadcast community. I would urge every one of them to keep up with what is going on in the broadcast industry. A good start is to subscribe to all the broadcast-oriented publications they can get their hands on, especially this one.

There is a lot of great information available, as well as a heads up on whatever new the FCC is getting ready to do. For any broadcaster (including LPFMs), many of these subscriptions are free. They should also check out the FCC Daily Digest on a regular basis. It is easy to subscribe to from the FCC's website. It will arrive in your email inbox Monday through Friday. Specifically, you should read the "Broadcast Applications" and "Broadcast Actions" sections every day. It is the only way you will find out who is building what in your market, before it is too late.

I also suggest that LPFMs join their state broadcasters association and attend the meetings. Most have special rates for LPFMs. Attending these conventions is a great way to network with other broadcasters. You'll find that most LPFMs have a lot in common with many mom and pop 1,000-watt AM stations. Once they meet you and find out that you are not out to kidnap their first-born, many of these broadcasters can become great friends and may even help you. Stranger things have happened.

If there is a Society of Broadcast Engineers chapter in your area, make an attempt to attend at least one of their meetings and introduce yourself. Better yet, join SBE and become a regular — it is where all the engineers hang out. Once they discover that you are serious about being a responsible broadcaster, you will find that many of them are more than willing to help you out. A lot of these guys even know where the free equipment is located ...

Chuck Conrad
KZQX(FM), KDOK(AM) & KEBE(AM) Radio
Jacksonville, Texas

**RADIO'S STEPCHILD**

With all due respect to T. Scott Bailey, president/GM of WMRO/Gallatin, Tenn. ("Community AM Was Here First," July 15 issue):

I am one of those LPFM operators you are railing against indirectly. Forgive me for being defensive. But we did not create nor relax the rules where the AM band has been allowed to disintegrate into being almost unlistenable. It's also unfair that you have a FM translator but since you cannot be the licensee, you can't afford the translator. Again, not LPFM's fault.

REC Networks does not need me to defend them, but they are not advocating a commercial service. It has been shown that LPFMs are *no* threat to commercial radio stations in any case. I am in favor of very relaxed rules and penalties regarding enhanced underwriting for LPFMs who cannot afford full power NCE level fines — and even full power stations struggle with the rules regarding underwriting!

And though the proposed power increase to 250 watts sounds impressive, you of all people should know that it does not triple nor even double our coverage area, which is skimpy to begin with, not to mention (for those of us in more crowded areas) fighting co-channel interference. It is generally agreed that the proposed power increase will help with signal strength within our existing contours, and maybe an additional mile more. That's all.

And remember that it is LPFM, not AM, that is the stepchild of radio broadcasting. We have no interference protection, nor (as a secondary service) protection from full-power stations who may decide to take over our channel. So forgive me again if I'm only partially sympathetic to your ranting. The odds against any LPFM are way bigger than those against your station or any well-run full-power station.

BJ Mora
GraceRadio/KGCE(LP)
Grace Church
Modesto, Calif.



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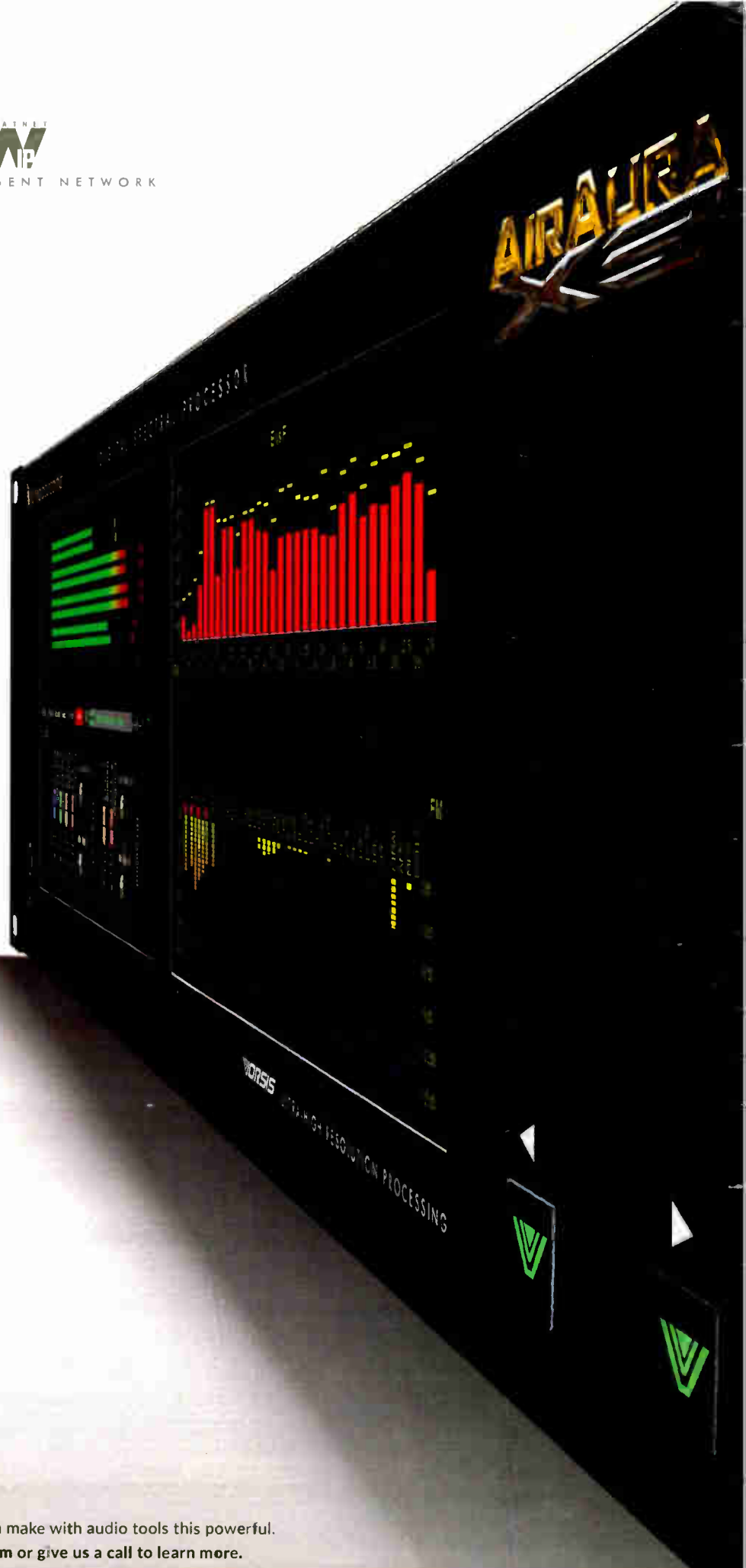
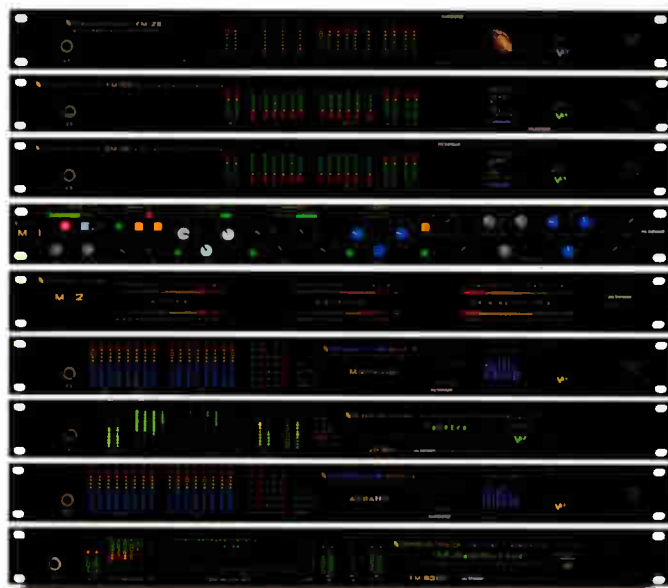
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