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Broadcast Indecency Is a Lightning Rod

Radio urges restraint and a streamlining of the current complaints process

BY LESLIE STIMSON

WASHINGTON — More than 100,000 public comments have been filed at the FCC on whether the agency should relax some of its broadcast indecency rules even slightly. The bulk of the comments are short and read something along the lines of this, from one citizen: "I am completely opposed to the FCC further allowing another level of moral decay on the 'airwaves.'"

The commission in April said it had reduced its indecency complaint backlog by some 70 percent, eliminating more than 1 million complaints, though this was mainly by closing those that were too stale to pursue. The agency then asked for public input on whether it should adopt an "egregious cases" policy, implying it would focus less on fleeting or isolated indecency incidents.

Public comments to GN Docket 13-86 were due June 19; the commission is taking reply comments through July 18.

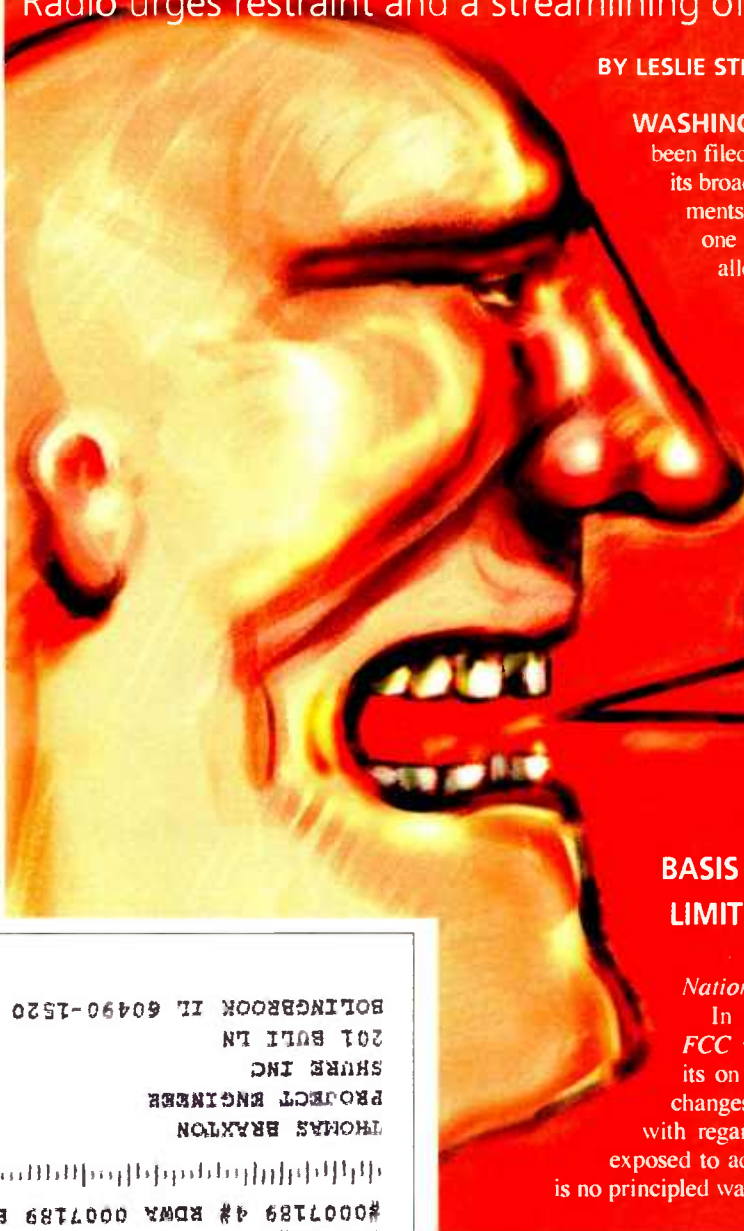
Below are excerpts capturing some common themes from broadcasters, industry and public advocacy groups:

BASIS FOR 'INDECENT' SPEECH LIMITS UNDERMINED

National Association of Broadcasters:

In the 35 years since the Supreme Court's decision in *FCC v. Pacifica*, the rationale for broadcaster-specific limits on "indecent" speech has crumbled under the weight of changes in technology and media consumption. Specifically, with regard to the government's concern that children may be exposed to adult-oriented or otherwise inappropriate material, there is no principled way to focus solely on broadcast content.

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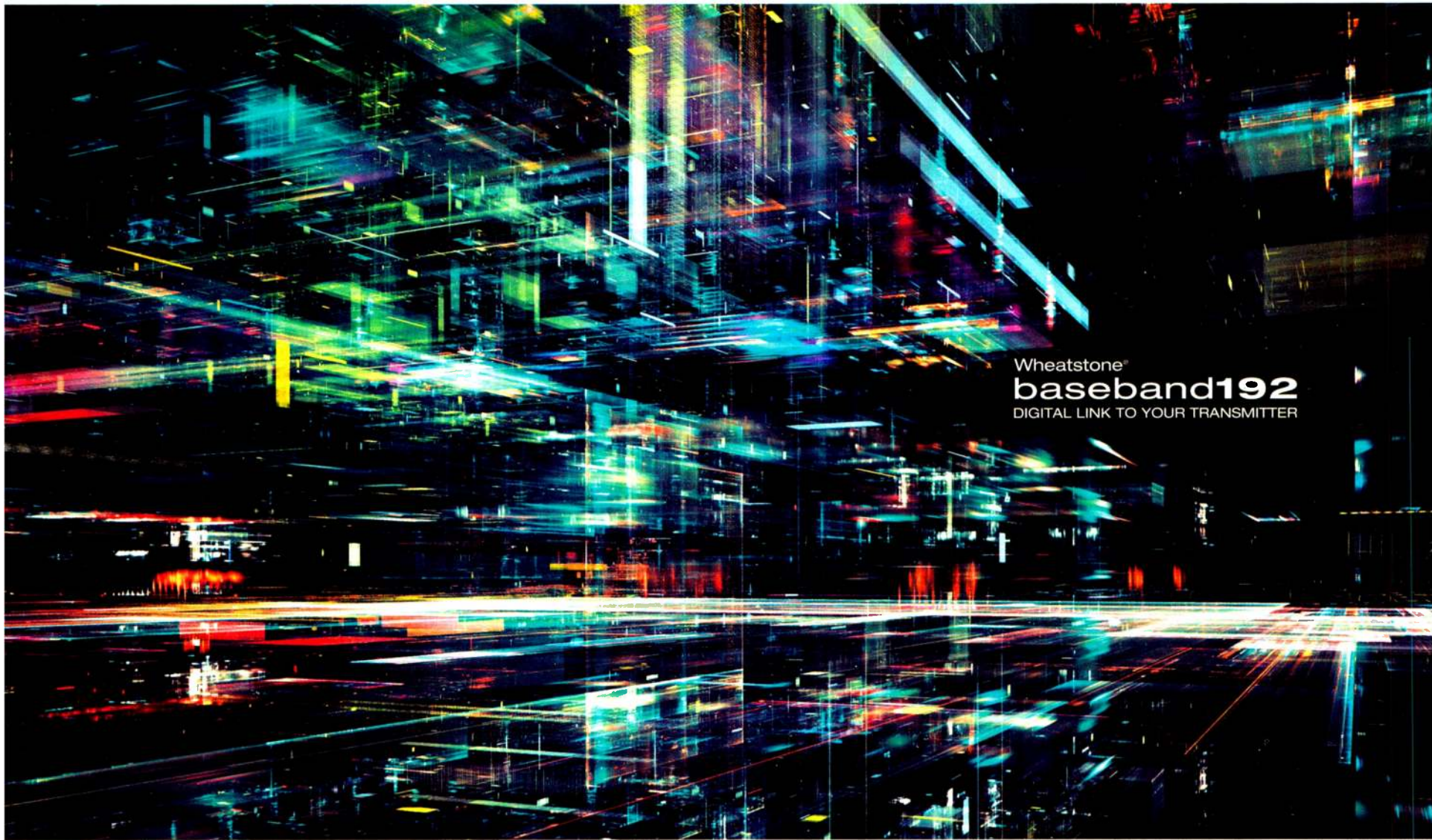


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Wheeler a Lock at the FCC?

Former cable and wireless lobbyist says the public would be his client



BY LESLIE STIMSON

Tom Wheeler's confirmation as FCC chairman doesn't seem to be in doubt, but when it might happen was uncertain as of early July. As I write, the GOP had not yet nominated a Republican to fill another open slot at the FCC. Nominees traditionally are sent to the Senate as a pair.

The latest GOP potential nominee being vetted in early July was said to be communications attorney Fred Campbell, director of the Competitive Enterprise Institute's Communications

Indiana Republican Sen. Dan Coats zipped through his questioning, saying he had to leave to do a radio interview. As someone who was in Congress, left to represent clients and returned 12 years later, Coats urged Wheeler to approach past clients with a "clean sheet" so they don't expect favors from the commission once he's in charge. Wheeler assured Coats he would consider the "American public" as his client, if confirmed.

The other fleeting radio reference was part of a long question from Washington Democrat Maria Cantwell. Referencing Gannett's recent announcement to buy Belo Broadcasting, she asked whether Wheeler thought Gannett was trying to get around cross-ownership rules.

Wheeler deftly sidetracked, saying he's an advocate of diversity, noting that the previous chairman had asked the GAO to weigh in on this topic and

way to grow businesses when they are challenged by new technologies is to embrace those new technologies. And that's a way of working yourself out of this kind of situation." Then he said he was trying to avoid being too specific on ownership and wants to become more informed on the issue.

The only hiccup, if you could call it that, came from Texas Republican Sen. Ted Cruz, asking the nominee whether the FCC has the authority to regulate political speech. "This is the one issue that has the potential to derail your nomination," Cruz said, though he added he would wait for Wheeler's full response later.

Wheeler calmly noted that there is a pending proceeding on the issue and he has to become more informed about it. "I do not miss the expression on both sides," he added, noting, "This is an issue of tension."



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Liberty & Innovation Project, who was a wireless adviser to FCC Chairman Kevin Martin and chief of the Wireless Bureau.

Wheeler's path seems clear. Senate Commerce Committee Chair Sen. Jay Rockefeller, D-W.Va., told the nominee during a multi-hour hearing in June, "I think you're going to be confirmed and I think you're up to the job."

Wheeler is managing director of Washington-based investment firm Core Capital. He was chief of the National Cable & Telecommunications Association from 1979 to 1984, and head of the Cellular Telecommunications & Internet Association from 1992 to 2003.

LITTLE RADIO

Lawmakers didn't ask Wheeler about his experience as an Obama fundraiser and campaigner.

Nor was radio much discussed, but I expected that, as the broadband rollout took center stage.

saying he was eager to see that report. Cantwell tried again: "A lot of people say the newspaper industry is having problems and this is why we should have consolidation."

Wheeler replied. "I'm a business person. It's been my experience that the

The nominee gave straightforward answers to many questions, including one about cellphone unlocking. Once a contract is up, he believes the consumer should be able to switch providers.

Overall, Wheeler said his business

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FCC Chairman nominee Tom Wheeler testifies before Congress.

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WWVB Notes Golden Anniversary

Now it looks beyond clocks and watches to OEMs for all sorts of devices

**FROM THE
EDITOR**



Paul McLane

Congratulations to NIST station WWVB on its 50th anniversary.

The National Institute of Standards and Technology, part of the U.S. Department of Commerce, this month observed the anniversary of the radio station's 1963 launch in Fort Collins, Colo. It published some super pix, here and on page 8, which I wanted to share with you.

"WWVB is best known today for broadcasting the time to an estimated 50 million radio-controlled clock radios, wall clocks, wristwatches and other timekeeping devices across the U.S. mainland," the organization noted in a station bio.

"But back in 1963, the station had an entirely different audience, broadcasting standard frequencies at the high accuracy needed by satellite and missile programs. The time signal, added two years later, then became a popular means of synchronizing power plants to prevent brown-outs, and coordinating analog telephone networks."

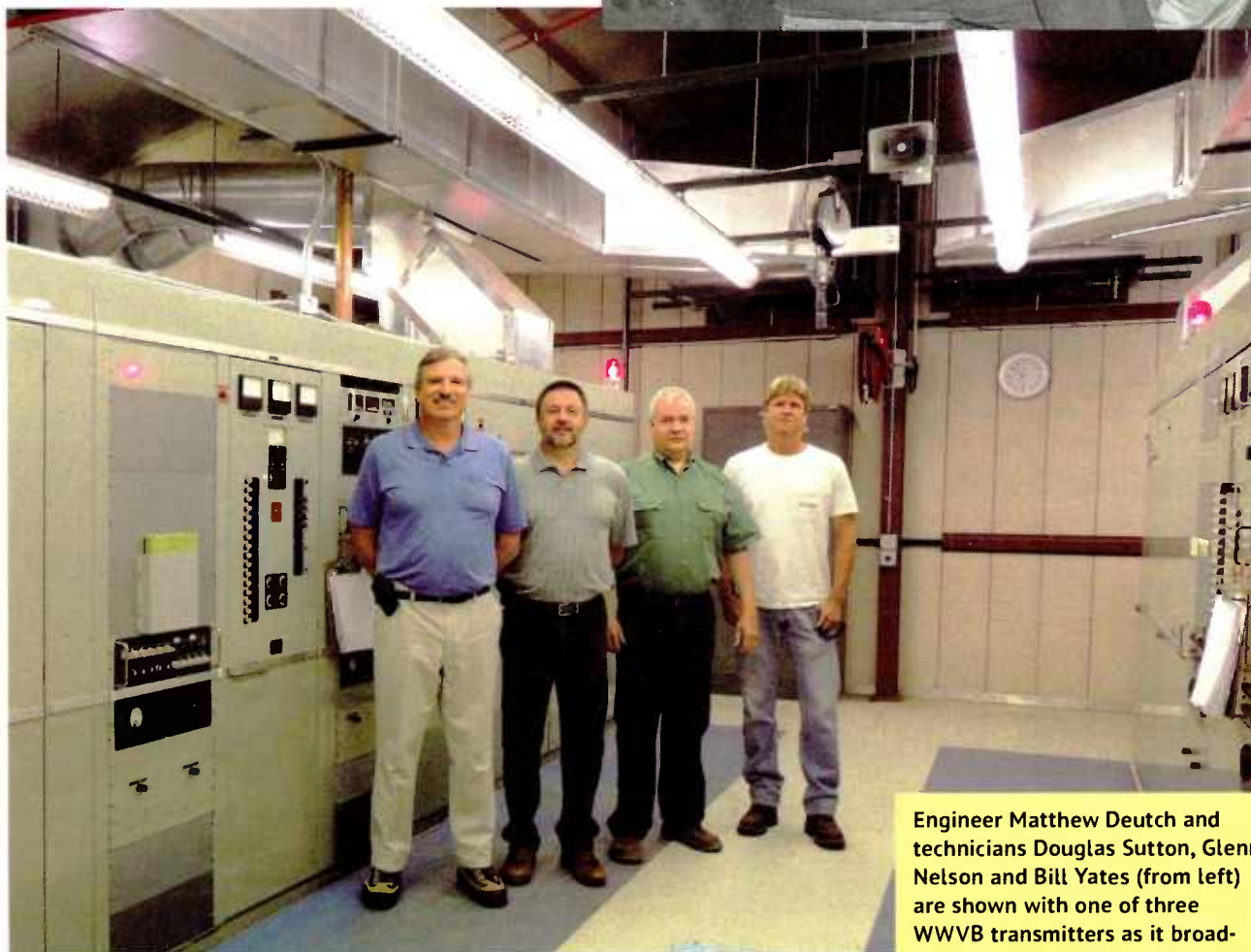
WWVB's signals are synchronized to NIST's atomic clock ensemble in Boulder, which is calibrated by the NIST-F1 cesium fountain atomic clock, the U.S. civilian time standard.

Some interesting points about WWVB, according to the official fact sheet:

- Operating at only 60 cycles per second, it has a wavelength of more than 3 miles. The ground and the ionosphere form a huge duct to guide signals around the Earth.
- It received its call sign in 1960. The B probably stands for Boulder.



Engineer David Andrews and technician Robert Oase work at the WWVB transmitter in 1963. Oase is relaying instructions to an engineer in another location who is tuning the antenna.



Engineer Matthew Deutch and technicians Douglas Sutton, Glenn Nelson and Bill Yates (from left) are shown with one of three WWVB transmitters as it broadcasts the station's signal in 2013.

- It began official broadcasts at 4 kW, later increased to 13 kW. In 1999 it went to 50 kW, which helped lead to wide use of radio-controlled timepieces. Power is now 70 kW and the station uses a modified time code format that its leaders say boosts reception capability 100-fold and will encourage the inclusion of radio-controlled timing in a broader range of products like thermostats, refrigerators and sprinkler systems. We've reported on this initiative and will have more about it in coming months.

NIST this year also notes the 90th anniversary of high-frequency station WWV, which too is based at Fort Collins. WWV provides HF time and frequency signals, geophysical alerts and marine storm warnings that are used by hams, stopwatch and timer calibration labs, piano tuners and phone callers wishing to set timepieces manually.

WWV and WWVB seem to hold a special kind of appeal to some of us. I wonder why that is. What's the romance? Comment at radioworld@nbmedia.com, attention: Letters to the Editor.

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OPINION

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WHEELER

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experience is a plus. "What I learned from my business experience will make me a better chairman." He called himself an unabashed supporter of competition.

'TIMELY FASHION'

He sounded like someone who would make the trains run on time. "I've spent a lot of time dealing with the FCC in my life. It's important that the FCC makes decisions in a timely fashion. There's nothing worse than businesses not knowing what the rules are." However, the former cable and wireless lobbyist also stressed that he's aware the agency is a group, "not a sole proprietorship."

I had to laugh when after a back-and-forth on how he would treat merger reviews, Wheeler said he'd only be guided by the facts of the case in front of him. Nevada Republican Sen. Dean Heller then asked "if you can assure us you'll have no votes between midnight and 6 a.m.," referring to such "problems in the past."

Wheeler replied, "It's certainly not my goal to be holding votes at that time of night." To hearty laughter, he assured the lawmakers that he's in bed most nights by 10 p.m.

It's clear lawmakers on both sides of the aisle feel comfortable about Wheeler leading the commission. In fact, after the committee took a one-hour break for floor votes, everyone came back. Rockefeller joked he had never seen that on this particular committee. Waxing enthusiastic, the West Virginia Democrat called Wheeler a "pioneer" in both the cable and wireless industries: "You understand the power of technology. Your career is one of innovation and leadership."

Despite the apparent slam-dunk for Wheeler, part of me would like to see Acting Chairwoman Mignon Clyburn hold the chair, minus the "acting" label, as a rite of passage for women's rights. Clyburn already is the first woman in the agency's 79-year history to head the FCC. (With its current three members, the commission is constituted entirely of minority and women for the first time in memory.)

My relationship with women's rights goes back a few years. My mother fought for women's right to wear pantsuits in her office in the early 1970s. Later in that decade, I marched on the mall in Washington with NOW, listening to speeches from Gloria Steinem and Jean Stapleton, among others, as they tried to secure passage of the Equal Rights Amendment — an amendment that has been reintroduced in every session of Congress since 1982.

Leslie Stimson is news editor and Washington bureau chief.

NEWSROUNDUP

RF GUIDELINES: The majority of an FCC proceeding on RF emission guideline updates concerns portable and mobile devices, like cellphones, but some portions apply to radio. Updates to existing rules, specifically for RF safety training and signage for some station personnel, go into effect Aug. 5. The commission also is updating portions of its warning sign requirements for the public and station personnel to clarify the concept of transient exposure. Comments are due to dockets ET 13-84 and 03-137 by Sept. 3 and replies are due Nov. 1.

DASHBOARD: Research firm SBD predicts connectivity in the dash will grow seven-fold over five years. In a report for mobile operators group GSMA, SBD forecasts almost 36 million new cars will be shipped globally with embedded telematics by 2018. That compares to 5.4 million in 2012.

HONDA: The 2014 Honda Odyssey arriving at dealerships is the first Honda to offer HD Radio. The minivan also features smartphone-controlled Aha and Pandora interfaces. HD Radio is standard in the Touring Elite version of the minivan along with Neural 5.1 surround audio.

BBG: Former members of the Broadcasting Board of Governors told lawmakers there should be one full-time person in charge of U.S. overseas broadcasting. Beyond that, there appeared to be little agreement on board reform. The BBG is the federal entity that oversees Voice of America, Radio Free Europe/Radio Liberty, Radio Free Asia, Radio/TV Marti and the Middle East Broadcast Networks. House Foreign Affairs Committee Chairman Ed Royce, R-Calif., held a hearing in late June after two government reports concluded the part-time board is "plagued by infighting" and "dysfunctional." The former BBG board members disagreed on whether the entity should once again be a part of the U.S. State Department.



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(continued
from page 1)

Children in particular enjoy unfettered access to content via devices that they carry in their pockets and backpacks — access that usually involves no subscription or special parental involvement. In this environment, the constitutionality of a broadcast-only prohibition on indecent material is increasingly in doubt.

Center for Democracy & Technology, Electronic Frontier Foundation, Public Knowledge, TechFreedom:

The commission's proposal that it will only address "egregious" incidents of indecency is a step in the right direction. But this is not enough. [W]e urge the commission to do as little harm as possible to First Amendment values by quickly issuing a new enforcement policy that provides clarity and predictability to broadcasters. Broadcast speakers, like all speakers, should not have to defend themselves against vague and subjective accusations.

[W]e believe that it is simply a matter of time before the Supreme Court strikes down indecency regulation once and for all. Whatever the future of broadcasting might be, there is no question that broad-

casters have the same First Amendment rights as other speakers.

COMPLAINT PROCESS IS A BURDEN TO SMALL ...

Morgan Murphy Media, submitted by its Washington counsel:

The complaint-driven process shifts significant costs to broadcasters when meritless complaints are filed, and the Enforcement Bureau's policies place significant pressure on broadcasters to sign away important rights as the cost of conducting legitimate business before the commission. The current system permits the filing of informal indecency complaints against broadcasters without any showing that the complaint is *bona fide*, not frivolous. As Morgan Murphy and others have found, the filing of an indecency complaint with the FCC may result in the Enforcement Bureau placing a hold on applications subsequently filed by the broadcaster in the ordinary course.

... PUBLIC ...

National Public Radio:

For responsible producers of broad-

cast programming, the consequences have been significant. NPR, its members and other public radio broadcasters have been forced to reconcile the sometimes competing demands to produce programming that serves the public interest while avoiding broadcasting indecent or profane matter. Because the public interest may require the use of language or other broadcast matter that is potentially objectionable to some, the task is far more challenging than simply employing a delay system.

News and public affairs programs, in particular, require the producer to make editorial determinations based on the issue(s) being addressed, the substance of the programming and the make-up and needs of the station's listeners. The commission's enforcement approach has made those determinations significantly more difficult.

... AND COLLEGE STATIONS

KUCR(FM), Riverside, Calif., submitted by John Crigler, Garvey Schubert Barer:

KUCR is concerned, that with all the training, all the precautions, all the good faith, intelligence and devotion of our volunteer staff, and an 8-second delay — with all of that — accidents may still occur. For KUCR, with its small budget, an indecency fine would be catastrophic. The legal costs of responding to an FCC inquiry would be crippling, even if no fine were imposed. Clearly, the maximum \$325,000 per incident fine is meant to chasten a corporate broadcaster who may have previously viewed a mere \$32,500 fine simply as a cost of doing business by providing a racy language edge in the competitive world of drive-time morning zoo sensationalistic commercial radio.

The punishment for a small broadcaster in no way fits the violation.

FCC SHOULD 'TRIAGE' COMPLAINTS

Saga Communications:

Saga urges the commission to implement a "triage" system to discourage frivolous or unsubstantiated complaints and to identify "cookie cutter" indecency complaints. These complaints clog the system and harm the public interest by wasting scarce commission resources.

[Q]uickly review complaints as they come in and separate them into the following categories:

- Those that are not likely to result in a sanction, or are unsupported by probative evidence, even if the underlying facts are true; and

- Those that are likely to result in a sanction, if the underlying facts are true and supported by probative evidence.

Complaints in the second category may be further subdivided into:

- Those that are serious enough to merit an "enforcement hold" on the station; and
- Those that merit a sanction, but are not so serious to merit an enforcement hold.

PROCESS NEEDS REFORM

Beasley Broadcast Group, Eagle Creek, Entercom Communications, Galaxy Communications, Greater Media, Journal Broadcast Group, Lincoln Financial Media and Ramar Communications, submitted by their attorneys at Lerman Senter:

If the FCC believes it necessary to continue to regulate in this area, not only should the substantive policies relating to indecent content be changed, indecency-related processing rules should also be overhauled. The current processing scheme is far too imprecise, costly and time consuming. To improve the processing of indecency-related complaints, the commission should only entertain documented complaints against specific stations from bona fide viewers and listeners. Such documentation has previously taken the form of either a tape or a transcript. Undocumented allegations of complainants should not be credited, particularly when there is no way to establish what material actually aired.

National Association of Broadcasters:

Procedural reforms to indecency enforcement practices are needed. In particular, the commission should: (i) dispose of clearly non-meritorious complaints very quickly; (ii) proceed with enforcement inquiries only where complaints have been submitted by a complainant with first-hand knowledge of the programming at issue and contain sufficient information and supporting documentation; (iii) increase transparency by notifying broadcasters of both the filing of indecency complaints and the dismissal of complaints; (iv) address and resolve complaints in a timely manner so that license renewal and other applications are not unduly delayed; and (v) take swift action on reconsideration petitions and responses to notices of apparent liability so as to reach final decisions and permit court review.

NEED RESTRAINED APPROACH

National Public Radio:

Lost amid the furor over a few high-profile incidents has been the deleterious effect of the commission's enforcement efforts

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on responsible broadcasters. Because a more restrained approach to indecency and profanity enforcement would better accommodate the protected speech of public radio broadcasters and better allocate commission resources, NPR endorses the proposed "egregious cases" approach. ...

By providing greater room for editorial discretion, an egregious cases approach allows a station or program producer to make programming decisions knowing the commission will pursue abuses of discretion rather than second-guessing individual word choices. By adopting a more practical approach to indecency and profanity enforcement, the commission staff could routinely dismiss complaints about broadcast matters that may involve an isolated anatomical reference or a subject matter offensive to a few but clearly not indecent or profane.

INDECENCY POLICIES MUST BE CLEAR

National Association of Broadcasters:

NAB believes that merely focusing enforcement on "egregious" indecency cases is not sufficiently clear. In revising its indecency standards, the commission must use language that is as precise as possible and provide relevant examples

and context in its policies and decisions. If the commission cannot establish sufficiently clear indecency regulations so that broadcasters know what is expected of them, then broadcasters cannot be subject to liability for alleged violations of those standards.

Emmis Communications Corp., Radio One:

The FCC has not defined the term "egregious," leaving broadcasters with no guidance as to what the commission will deem to be of such flagrant, blatant and glaring offensiveness to be deemed "egregious." ... The absence of meaningful and consistent guidance regarding the contours of the FCC's indecency policy creates a real chilling effect on broadcaster speech.

NO FLEETING EXPLETIVES POLICY

Future of Music Coalition:

FMC strongly urges the commission not to expand its current indecency policy to include a ban on "fleeting expletives" from the airwaves. Such a policy creates an inhibiting environment that has a chilling effect on artists' creative expression — among the speech the First Amendment was designed to protect. The chilling effect is most pronounced upon noncommercial and other small stations, including the low-power FM stations that FMC has long championed, and which the FCC is about to more broadly license.

KEEP FLEETING EXPLETIVE POLICY

Family Research Council:

FRC believes that the commission's policy opposing the use of "fleeting" expletives is reasonable. Technology is available to broadcasters that allow them to delete indecent language in live programming. There does not need to be a deliberate and repetitive use of patently offensive speech to know that a broadcaster is allowing indecent language to be aired. On those occasions when something offensive slips through a broadcaster's filters, the commission can assess whether a serious effort was made to keep such language from being broadcast before assessing penalties.

EXEMPT NEWS PROGRAMMING ...

Radio Television Digital News Association, via attorneys at Wiley Rein:

The commission's standards have left broadcasters with little real grasp of what is allowed and what is not, and lack the clarity that the courts and the constitution demand. While RTDNA is uncertain that the commission can come up with standards that ultimately will survive First Amendment scrutiny, at a minimum, the commission should immediately ameliorate the chilling impact on broadcast journalism by exempting from indecency regulation

language or visuals contained in news and public affairs programming.

... AND RADIO READING SERVICES

Sun Sounds of Arizona:

Many radio reading services have been unable to migrate to HD Radio because they have not been able to convince their FM main channel hosts to carry their services over digital audio broadcasting radio stations, despite the great bandwidth available to these stations. The resistance, in part, stems from the chilling effect of commission indecency policy enforcement. These stations are concerned because audio information services do not typically edit or censor the printed page read aloud for listeners, just as those printed pages would not be edited or censored before being read by sighted persons.

VOID WHOLE THING

Family Research Council:

Simply put FRC opposes everything about this illegitimate and ill-advised proceeding. ... This proceeding should only have been started after consideration by the full commission when its members did not include holdovers. The commission needs to start enforcing its indecency policies including its rejection of even "fleeting" expletives and nudity.

WWVB

(continued from page 8)

This 1963 photo of NIST's then-new radio station in Fort Collins, Colo., was taken from one of four towers supporting an antenna. The small building in the foreground is the helix house, which contained equipment to electrically match the station's transmitter to the antenna.



Photos courtesy NIST



Modern photo of NIST radio station WWVB. The transmitters are in the building. In the background are WWVB's four north towers supporting the antenna in the center. The cables are most visible under dark, stormy skies like this.

HIGH CAPACITY EVENT STUDIO TRANSMITTER LINKS



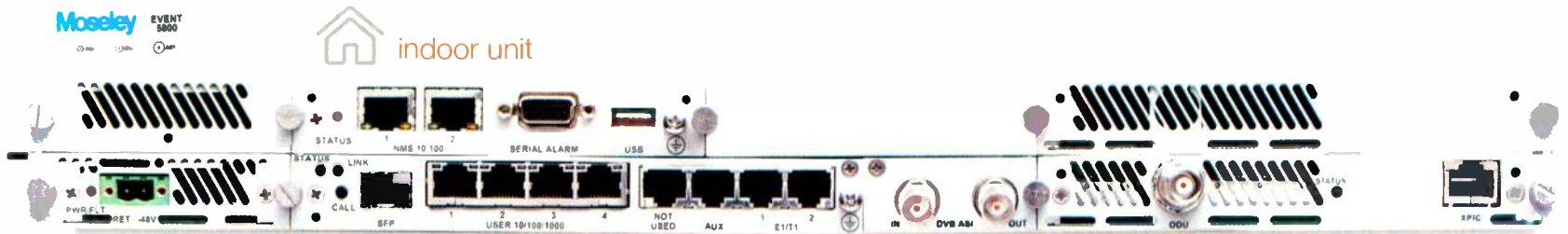
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HENRY SPORTS POD FEATURES DUPLEX TALKBACK

Henry Engineering's new Sports Pod is similar to its Talent Pod, with the same headphone audio-mix facilities and ability to link several units via Cat-5 cable. But instead of two buttons for mic control, it has three: mic on/off, cough and talkback.

Also new, the Sports Pod's microphone on/off function can be controlled remotely; both the talent and a remotely operable pushbutton can control the mic. The remote tally output can illuminate the remote mic on/off button for confirmation.

Sports Pod's new talkback system will let the talent to talk to a producer or engineer. Pushing the talkback button will mute mic audio from the main (on-air) output, and send it to an isolated talkback output. This output is transformer-isolated and balanced, suitable for very long cable runs. When Sports Pods are used with a Henry Engineering MultiPhones master unit, full-duplex talkback (intercom) between talent and producer is possible.

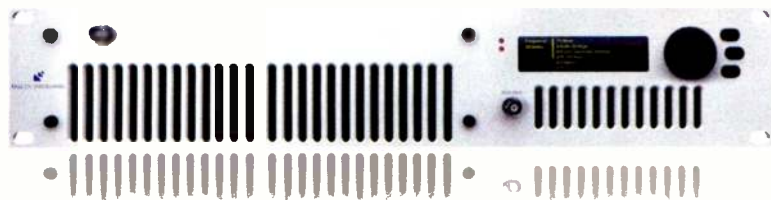
The Sports Pod is compatible with the Cat-5 protocol used for Talent Pods, MultiPhones and MiniPods, so units can be "mixed and matched" in an integrated system.

INFO: www.henryeng.com



NEW TX, PROCESSOR LINES AT BW BROADCAST

BW Broadcast's biggest recent announcement is a new line of transmitters, the V2, available in power levels ranging from 5 to 1,500 watts, and certain models are suitable for LPFM. The V2 sports an Ethernet port for remote operation, including via a smartphone app.



The V2 has an onboard BW Broadcast multiband processing from the company's DSPX range along with an exciter. In addition, the V2 line is designed to be field-serviceable. Dual universal power supplies can slide in and out one at a time as needed in some models. Furthermore, BW Broadcast's "Gold clamp" transistors can be removed and installed with a screwdriver, eliminating the need for a soldering iron.

BW Broadcast's most surprising news recently might have been the acquisition of the Ariane processor line from TransLanTech Sound. BW is not unfamiliar with the Ariane, having been a development partner and manufacturer for years.

INFO: www.bwbroadcast.com

JK AUDIO REMOTEMIX 2 IS A MULTIPURPOSE TOOL

JK Audio's battery-operable RemoteMix 2 (shown) is a multi-duty audio tool; call it a two-channel field mixer/phone hybrid/headphone amplifier. It also has a built-in notebook/cellphone interface. JK Audio says, "Use it as a phone line hybrid, calling in to your studio talk show hybrid. Use it as a front-end mixer for your POTS, ISDN, IP or smartphone codec."

The CSM-IP is a call screener module for the JK Audio Concierge talk show



Hz-3.4 kHz (G.711) phone call voice bandwidth.

INFO: www.jkaudio.com

RUSHWORKS BRINGS VIDEO TO RADIO

Rushworks believes that "Everybody likes behind-the-scenes video."

With that in mind, Rushworks offers the VDesk Radio/TV system, suitable for radio stations that wish to create video content from their studios. It includes two or three remote robot PTZ cameras along with computer hardware, software and a touchscreen tablet interface.

The company explains that the studio camera control interface allows for a mock-up of the studio and simple "touch and take" camera switching. Many other controls can also be initiated by touch rather than requiring clicking or a third-party hardware controller.

Rushworks says that it designed the system to require minimal training and no extra personnel to get a station or a station's remote production onto the Internet.

INFO: www.rushworks.tv



system. The CSM-IP provides call screener software tools and has a resident Web server program for remote control of a Concierge system. It can also facilitate conference calling.

The company also announced an upgrade to the BluePack Bluetooth cellphone interface. Depending on the phone, the BluePack can accommodate HD Voice (G.722), the extended voice bandwidth standard. HD Voice rates 120 Hz-7 kHz, compared to standard 300

Delivery systems from dozens of partners like ENCO, RCS and BSI are Livewire-ready. One RJ, multiple channels. Sweet!

Livewire nodes from Axia partners let you extend your network's capabilities. Import MADI signals, log audio streams, or take hardware-based control of network routing (like this Paravel iRoute does).

Who's got time these days? You do, with Livewire-connected time management from 2S-Seven.

Look Ma, no hands! PathfinderPC, with Boolean logic and drag-and-drop stacking event editor, automates routing control.

Livewire in Omnia audio processors ensures a clean, all-digital signal path.

Livewire in Nautel receivers and IDC satellite receivers means you're covered inbound and outbound.

xSwitch: world's first Ethernet switch designed for IP-Audio. 8 Livewire ports, 2 Gigabit ports with SFP. - zero configuration.

Telos family of IP and ISDN codecs are ready to plug in.

Fanless xNodes with PoE pack lots of I/O into a tiny space.

Every family's got a big talker. Here's ours: the world's first broadcast IP Intercom that lets you take full-bandwidth audio to air

Only Axia builds a network switch into the console engine. Plug in your sources and start broadcasting.

Pro sound cards and audio processors-on-a-card from AudioScience and Sound4 bring Livewire connectivity to your PC

Now that Livewire and RAVENNA are partners, speakers and mics have a direct connection to your network, too.

XY panels: routing controllers, programmable button panels - you're in total control of your network

8-fader Radius has 4 mixing buses, auto mix-minus, voice EQ — just like its big brothers

Consoles? Oh, yeah, we've got 'em, big, small and in-between. This is an Element: over 4,000 raving fans worldwide (so far). Sizes from 4 to 40 faders.

DESQ packs lots of power into a small package (Like your Aunt Louise's rum balls.) Just 18" square

iQ: a mid-sized console that can grow from 8 to 24 faders. Powerful, expandable. now, that's smart.

Ooh, shiny! Studio control panels give your talent the power they crave.

Looks small, performs big. RAQ console puts giant-size capabilities into just 4RU

Hello, it's for you. Telos phone systems work seamlessly with Axia networks (of course)

AXIA MAKES THE NET WORK.

Choosing an IP Audio network? Some companies treat AoIP as if it were an RCA jack — nothing more than a way to get audio into a console. But Axia fans know that the network's real value comes when devices truly communicate.

Axia Livewire™ networks are much more than glorified punchblocks. Axia consoles integrate with a big family of more than 70 broadcast products, from 45 partners, to intelligently share audio, data and control between studio devices with the click of an Ethernet cable.

Phones, codecs, delivery systems, audio processors, profanity delays, pro audio cards and more — all form a sophisticated ecosystem. So phone and codec callers receive automatic mix-minus. Satellite feeds record unattended. Broadcast-quality intercoms can go straight to air. Shows are smoother and more error-free. And Axia is a charter supporting member of the AES X192 standards project, so your investment is future-proof.

So when you choose your IP Audio network, choose the one with all the connections. Axia — we make the net work.

AxiaAudio.com



FROM WHEATSTONE, SEVERAL NEW SURFACES

Wheatstone recently introduced the L-8, a low-profile, tabletop digital IP control surface, shown to the right in the photo below. The company says it is a great choice for small stations or station-within-a-station scenarios.

The L-8 offers hot-swappable individual fader modules, allowing assignment of any network source to any fader. It has four output busses and eight mix-minus feeds, and includes a monitoring section, giving users control room, studio and cue monitoring functions.

Wheatstone says the newly introduced TS-4 and TS-22, also shown, provide tools needed to produce a show or air a live newscast from another studio location.

The TS-4 Talent Panel features talkback and cough buttons, source selection, headphone amp, OLED display, headphone level control in one panel, with no outboard equipment required and no wiring, the company says.

Wheatstone's larger TS-22 Talent Station has the control of the TS-4, but with additional built-in timer, studio speaker control, time-of-day clock, six scriptable soft buttons, and a six-button programmable source selector switch bank. These are housed in a standalone countertop turret. It is also available as a flushmount panel.

All of these devices are IP plug-and-play using the WheatNet-IP audio over IP network, to work with other WheatNet-IP control surfaces, Blades and network devices.

INFO: www.wheatstone.com



BSI ADDS IPHONE SIMIAN REMOTE CLIENT

Broadcast Software International introduced the iPhone Simian Remote client for Simian Pro 2.2 (shown) for its Simian automation system. The company says that the client offers all the remote control features of the currently available PC and iPad remote clients in an iPhone native app.

According to the company users can control Simian Pro automation, insert cuts into the program log from the studio's audio library, set pass-through mixer levels, and even record voiceovers with the Voice Track editor on an iPhone. The iPhone Simian Remote client's Voice Track editor includes the ability to preview the ending and upcoming cuts and set the crossover points of the remote voice track before uploading into the program log, just as if it was recorded in the studio.

The optional Simian Gateway creates a TCP/IP portal into a Simian 2.2 Pro automation system for Simian Remote for PC and Simian Remote for iPad clients — and now Simian Remote for iPhone — to connect to an on-air or production studio on a local network, or remotely across the Internet via Wi-Fi, 3G, or 4G.

INFO: www.bsiusa.com



OMNIA.11 GETS NEW SOFTWARE

Version 1.4 software for Omnia Audio's Omnia.11 is available. Performance enhancements include a phase rotator for smoother voice, bass enhancer for fuller low end, a BS-412 limiter and metering for the DJ limiter.

New additions include multiple security levels, optional preset protection/encryption and per-unit authorization and cardless feature activation.



GUI and control tweaks include a Quick Setup Tab, on-screen help text for front-panel and remote interfaces, a Livewire Sync indicator on the front screen and remote interfaces, sync master control in the MBAGC Basic tab, Thunder Boost control in the WB/ENH/Advanced tab, comparative fail switch in the input menu and finer 0.01v increments on the composite output level controls.

The software upgrade is free and it is for FM and FM/HD models.

Separately, the company launched a new brand with a legacy name, AudioActive, describing it as a series of devices and services that "will not only allow RDS-based data and images to be reproduced on a smartphone screen during Internet streaming, but will also allow direct user interaction via the same screen. It will also allow data reproduction and interaction on FM transmissions received off-the-air on FM-equipped smartphones." The first offering is the DP-1 processor, developed with partner and RDS specialist Jump2Go.

INFO: www.omniaaudio.com

MOSELEY MAKES THE LINK

Moseley Broadcast is supercharging its new LANlink Turbo 900 LAN extender/data link, the latest LANlink 900.

The Turbo 900 should be capable of 50 Mbps, which Moseley says is 50 times faster than the previous model, according to a release. It uses the 900 MHz ISM band so that it operates unlicensed.



Moseley notes that it operates so close to the 950 MHz band used for wireless STLs that it uses the same antenna and infrastructure. A built-in duplexer is for facilitating such use.

The LANlink 900 can be used for IP-based transmitter remote control, RDS, off-premises servers, security surveillance video, Internet connectivity and email at a remote site and more.

INFO: www.moseleybroadcast.com



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"A top of the line relay receiver for a translator in a congested signal area."

Robert Reymont

"Our RBRX1's are fantastic. We have some very difficult sites and these are the only receivers that pull in the signal and give a clean re-broadcast."

Juan Turner, Energy FM

Contact SCMS for more information

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Put a Scrap Satellite Dish to Good Use

Use these step-by-step illustrated instructions courtesy of Frank Hertel

WORKBENCH

by John Bisset

Read more Workbench articles online at radioworld.com

If you do any kind of live sports event coverage, check out this project from Newman-Kees' Frank Hertel. It doesn't cost much, doesn't take a lot of time (less than an hour) and results in a parabolic microphone that will give your sports remotes some outstanding field or court noise.

First you need to locate the scrap dish, such as the one pictured in Fig. 1. Along with the dish, you'll need some pieces of 1/2-inch copper pipe and a couple of



Fig. 1: There's a new use for these old satellite dishes.



Fig. 2: First, remove the feed horn and electronics assembly.



Fig. 3: Save the metal support ring.

1/2-inch fittings.

Comments accompany each picture here but you can also use your imagination. As presented, the parabolic microphone works well; however, you may think of a way to improve it. A deeper dish will offer a more directional pickup pattern, but almost any dish will work. For this project, Frank used an omnidirectional microphone. A directional or cardioid mic may or may not be an improvement. Try it and see.

So with the dish cleaned and in hand, let's begin. The first step, shown in Fig. 2, is to remove the dish feed horn assembly and electronics module. Save the circular support ring, seen in Fig. 3, as it will be used as a template for fabricating a filler



Fig. 4: Use the ring to trace a filler panel carefully.



Fig. 5: Cut, shape and smooth the filler panel.



Fig. 6: Fasten the filler panel to the dish, using four #6x32 bolts and nuts.



Fig. 7: Serrate an edge of the copper support pipe.

plate for the hole where the feed horn assembly was mounted.

Using a piece of scrap aluminum, trace the support ring and cut it out as in Fig. 4. In Fig. 5, you can see how the rough-cut filler is sanded to provide the finished hole-cover.

Bolt the filler into place, using four #6x32 bolts, washers and nuts, shown in Fig. 6.

At this point, the work to manufacture the microphone support begins. As seen in Fig. 7, cut a 1-1/4 inch piece of half inch copper pipe. Securing the copper tube in a vise, serrate one end down to the depth of the hack saw blade.

(continued on page 20)

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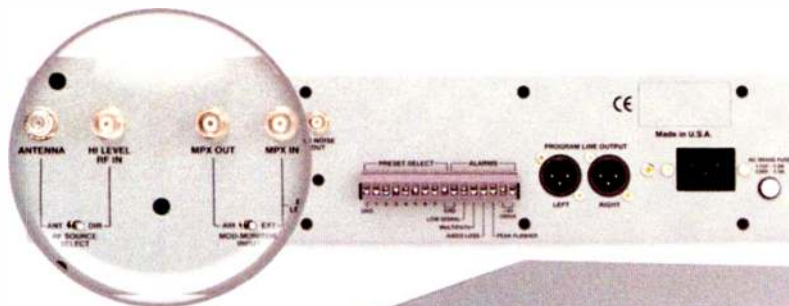
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www.inovonicsbroadcast.com/model/531

Key Features & Specs

- Standard 87.9MHz -108.1MHz tuning range in 100kHz steps.
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- 24 hour thermal "burn in" test for each unit before shipping.
- Alarms for Peak Overmodulation, Signal Loss, Program Audio Loss and Multipath.



08:27

IP-12 DIGITAL

SWITCHED
-20 -15 -12 -10 -6 -3 0 3 6 10 12 15 18 OVR

SPORTS-1 SAT-2 NETWORK NEWS-1 NEWS DIS



ain't got no distractions



Two 8x2 Stereo Virtual Utility Mixers
These can be used for a wide range of applications; for example, using Wheatstone's ACI Automation Control Interface, your automation system can control the mix for satellite or local insertion switching.

StudioHub® Compatible RJ45 Interconnects
Plus there are connections unique to each BLADE such as XLR jacks, etc.



Gigabit Ethernet
100/1000 Mbs permits robust operation and allows for exceptional expansion capabilities



Built-in Web Server
so you can configure and control locally or remotely without having to run dedicated software



Silent — No Fans
Can safely be located in a studio with live mics



Intelligent Operation
Programming a BLADE is easy. Scripting enables decisions about what to do and how to do it. Kind of like "If/Then" on steroids.



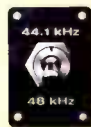
DNA of the Entire Network Stored in Every BLADE

Every setting for every network device is stored inside every BLADE. Handy, if you ever need to replace a BLADE. Just plug it in and it learns from the network!



Flexible GPI Logic
12 universal logic ports, programmable as inputs or outputs, routable throughout the entire system

True Mono Channels
No need to tie up stereo pairs



Selectable Sample Rate
44.1 or 48 kHz



ACI (Automation Control Interface)
An embedded interface for complete external control over IP for both the BLADE itself and its Utility Mixers



Family Ties
Every BLADE is part of the extended family of WheatNet-IP™ compatible and interoperable devices, including automation systems, schedulers, scripting, studio controllers, Talent Stations, codecs, STLS, intercoms, processors, mic preamps, utility panels and more.

Front Panel Headphone Jack
with source select and level control — monitor any system source



Front Panel Bar Graph Meters
Switchable to display source input level or destination output level after gain trim



Front Panel Routing Control
Any system source to any destination on that BLADE

Silence Detection
Each output can trigger alarms or make a routing change



SNMP Messaging
for alerts

Each BLADE on the Intelligent Network is exceptionally powerful...
but do you know about the incredible functionality inside **EVERY** BLADE?

By now, it's a good bet you're aware of the WheatNet-IP Intelligent Network. You know about its advantages - how it's obsessively compulsive about redundancy. How it can repair itself, configure itself, run rings around the competition while still having much greater bandwidth (due to its Gigabit Ethernet throughput) - enough, in fact, to not only handle our increased functionality today, but well into the future.

So we figured it's time to let you know a little more about those boxes you plug into the Intelligent Network. The ones that contribute to its intelligence. They're called BLADES and from inception have been far more advanced than any boxes on any other networks out there.

Take a look and consider how you'd put all that to work in YOUR WheatNet-IP system.



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Don't Hate the Player, Learn the Game

Music subscription services are a growing field for these companies

BY JAMES CARELESS

Online music services, otherwise known as music subscription services, appear to be the “next big thing” in consumer audio consumption. But sorting out the players isn't easy, especially once you get past well-known names like Pandora and Spotify.

Here's a mini roadmap. We've omitted Clear Channel's iHeartRadio, with which RW readers are more familiar, and other services that could easily be included, like SiriusXM's online service.

Our thanks to Tim Davis, director of digital at Jacobs Media, for his advice and guidance in crafting this list.

APPLE iTunes RADIO

Unveiled on June 10, Apple's much-anticipated iTunes Radio service takes a page from Pandora's playbook with its provision of free content, and commercials to pay the bills.

The service is going to “personalize” listeners' music, based on what they have already purchased from iTunes, and what they have been listening to.

Listening to where, exactly? Pay \$25 to subscribe to iTunes Match, and the service, according to iTunes, will check “which songs of yours are available in the iTunes Store, and then any match will be automatically added to iCloud for you to pull up and listen to anytime.” Which means you cut back on storage space.

Subscriptions also come with a commercial-free version of iTunes Radio.

Will Apple iTunes Radio fly? Well, the sheer power of the Apple brand is enough to give everyone else in the online music business the willies. After all, Apple's iTunes' online music store is a proven powerhouse, with more than 25 billion songs sold as of February this year.

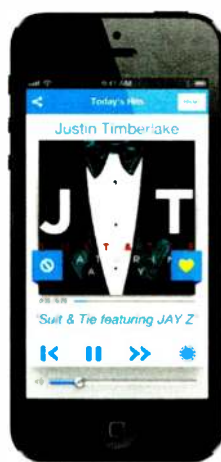
Also, according to a Wall Street Journal article from June 26 (“Apple Spells Out iTunes Radio Terms”), Apple is offering to pay record labels 0.13 cent royalties per listen of a song, as compared to Pandora's rate of 0.12 cents per listen, giving Apple a slight edge (as of press time).

In essence, competitors beware: iTunes Radio launches this fall in the United States.

GOOGLE PLAY (MUSIC)

Since its launch in November 2011, Google Music (now merged with Android Market to make Google Play) has yet to seriously challenge the biggies in the online music space. But given the sheer size of the Android/Chrome user base, this may yet happen.

In May, the service headed by Google Play Vice President of Content Jamie



These are just some of the streaming services currently on the market.



Rosenberg launched a pay version for \$9.99 per month called “Google Play Music All Access.”

That service gives users access to millions of songs across fixed and mobile devices, plus the ability to create radio stations and discover new music. An iOS version of the All Access app is expected to be out soon.

GROOVESHARK

Launched in March 2006 and headed by Chief Executive Officer Sam Tarantino (a co-founder along with Josh Greenberg), Grooveshark is the “Can't Kill 'Em Kid” of online music services. It has survived having its apps pulled by Apple, Facebook and Google, in response to Grooveshark being sued for copyright infringement by major music labels. In April this year, Tarantino was quoted in Mashable claiming that he was “broke” (in the same article, he was reported to make \$60,000 a year).

Today, Grooveshark offers free music by artist or genre on easy-to-use, low-hassle www.grooveshark.com, and has launched a premium service called Grooveshark Anywhere. For \$9 per month, or \$90 a year, Grooveshark Anywhere subs get access to the company's Android/ “jail-broken” (meaning free of certain restrictions) Apple/

BlackBerry/Nokia/Palm mobile app, plus other exclusive features.

Grooveshark has a combined total of 30 million unique visitors per month for both its free and premium services. It seems highly unlikely to dethrone Pandora, but equally unlikely to simply fade away.

PANDORA

Online since the summer of 2005 and headed by CEO Joe Kennedy and Founder and Chief Strategy Officer Tim Westergren, Pandora is the Microsoft of online music services. Translation: It is the 800 pound gorilla in this space, but its dominance is uncertain, given not only the launch of iTunes Radio, but also Kennedy's decision to retire with no successor in sight at press time, and Pandora's difficulty in turning a profit due to ongoing music royalty payments. It offers a free version with ads and a premium subscription (\$3.99 per month or \$36 per year) without ads, called Pandora One.

As of April, Pandora had more than 70.1 million active monthly users; out of that, 2.5 million or so are paying for Pandora One. Pandora is the leading OEM-installed app for Internet-connected TVs, DVD players and set-top boxes.

As Player Number One, Pandora is in

the crosshairs of Apple and Google. Concerns over Apple's iRadio copying Pandora's approach initially hurt Pandora's stock value, which has since rebounded. Additionally, Jacobs Techsurvey 9, a survey of radio users, recently found that Pandora's decision to run more commercials is motivating fewer people to use the service, yet Pandora is reporting more revenue earned per subscriber (either through ads or premium subscriptions). As well, its new “Pandora Premieres” feature lets paying subs hear new albums in full before they go on sale, and subs enjoy that.

RDIO

Created by Skype founders Niklas Zennström and Janus Friis in 2009, Rdio.com takes a social media approach to music, with users encouraged to share songs and playlists with each other.

It is available online and on major smartphone platforms, in both free and paid versions (\$9.99 per month for Rdio Unlimited on Web, mobile and supported players; \$4.99 per month for Web only).

The company isn't releasing user numbers beyond that, saying, “Since the end of 2012, we've tripled our number of new users.”

Rdio.com's backing by Skype's founders, and its “music discovery” features — letting listeners hear new songs similar to those they have personally selected — have won it respect from consumers and online music service critics. Ninety percent of its subs are on the \$9.99 Rdio Unlimited tier, according to an email from Rdio to Radio World.

RHAPSODY

Given its December 2001 launch date, Rhapsody.com is the granddaddy of major music services, and has a made a respectable run so far, with 20 million subscribers and 1 million paying customers. And it acquired infamous former online music downloading service Napster (remember that?) in 2011.

Headed by President Jon Irwin, Rhapsody boasts 16 million songs playable on more than 70 consumer electronics devices, including connected audio systems, smartphones, Android tablets, MP3 players and connected TVs — and no ads.

It pioneered the concept of a monthly flat fee in exchange for unlimited access to music. Today, Rhapsody has two paid plans; \$9.99 per month provides unlimited music playback plus downloading of music to one mobile device, while \$14.99 per month allows downloads of music to three mobile devices.

SLACKER

Founded in 2006 and relaunched in February 2013, the freshened-up Slacker.com has been picked by many, includ-

(continued on page 20)

IP. It's the new ISDN.

Meet Z/IP ONE: The "Z" stands for Zephyr.



It's the question on everyone's lips: "What comes after ISDN?" The answer: Z/IP ONE, the Telos Zephyr for IP connections. Broadcasters fell in love with the original Zephyr for its rock-solid reliability and superb audio; Z/IP ONE brings those same qualities to IP remotes.

Is IP reliable? TV networks say so - they use it for HD video backhaul. And Z/IP ONE is packed with IP-codec "smarts" to ensure reliability, even over the public Internet. Agile Connection Technology adapts to network conditions, delivering audio quality as good or better than ISDN despite packet loss and jitter. Genuine, high-performance MPEG codecs from Fraunhofer for exceptional fidelity — no lame knock-off codecs. No latency build-up, re-negotiation or fiddly adjustments: Z/IP ONE just works.

There's more: Z/IP ONE incorporates SIP, N/ACIP, and IPv6 standards. The worldwide Z/IP Server connection service helps traverse NAT routers and tricky firewalls. And now, you can do great-sounding handheld remotes using LUCI® LIVE smartphone and tablet apps. All of which makes Z/IP ONE perfect for live remote broadcasts, whether concerts, talk show remotes, off-site talent — even full-time STL links or RPU backhauls.

Experience the convenience and flexibility of IP.
Z/IP ONE: the best way to hear from there.™

High-quality remotes are right in your pocket.
Z/IP ONE now connects to LUCI LIVE smartphone
apps for wideband audio on-the-go.



Telos-Systems.com/zip-one

Telos
THE TELOS ALLIANCE

FEATURES



Fig. 8: Shove the serrated pipe into the microphone adaptor.

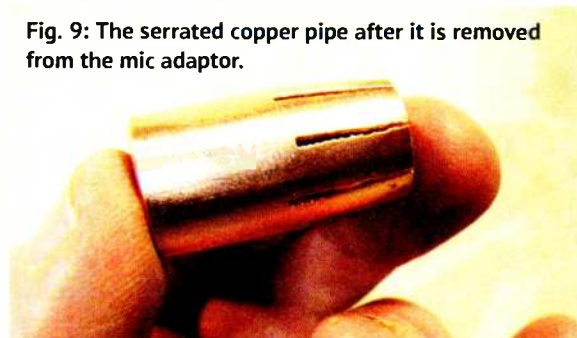


Fig. 9: The serrated copper pipe after it is removed from the mic adaptor.

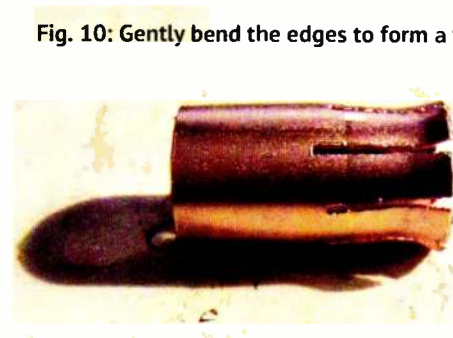


Fig. 10: Gently bend the edges to form a tight fit.

WORKBENCH

(continued from page 14)

Next, shove the serrated end into a mic adaptor, as shown in Fig. 8. This will initially shape it to size. After removing the copper tube from the mic adaptor, it will look like the piece pictured in Fig. 9.

Fig. 10 demonstrates how to slightly bend the serrated ends, which will secure the microphone adaptor.

And now, to assemble. Frank found that for this size dish, the piece of copper pipe is about 9 inches long. This shallow dish has a broad focus. As seen in Fig. 11, mount a 90-degree sweat (ear) mount to the dish. Insert the 9-inch copper tube and connect a 45-degree sweat elbow to the other end of the tube. To the other end of the 45-degree coupling, insert the mic adaptor you just modified.

Fig. 12 shows the finished product, with the mic adaptor added and the microphone in position for testing.

Though you would think that the copper joints could be soldered, Frank suggests securing them with #6x3/8 self-tapping screws. This will provide for easy assembly or reassembly, making physical changes for different microphones possible. Although the serrated mic holder adaptor holds the threaded mic adaptor well, Frank suggests you epoxy that assembly, which will keep the mic from rotating off axis.

Frank was going to remove the tubular support ring system, but found that it's an easy way to hold and point the parabolic microphone, and also serves as a good protective support when laying the dish down. Frank adds that there is ample room behind the dish to add a battery-powered microphone preamp, limiter and even a headphone monitor for the operator.

Frank ends his project by offering one



Fig. 11: Assemble the components.



Fig. 12: The finished product, ready to test.

other construction tip. To cancel handling noise or ambient noise, you can parallel a second omnidirectional mic. Mount this second mic to the top of the dish and wire it out of phase. Tying the two mics together, common noise will be canceled. The parabolic mic will be the only mic to "hear" the sound at which it is pointed. This is an old theater/sound reinforcement trick, and it works quite well.

If you build one of these, take some

high-resolution pictures and send them to me — especially if you make modifications.

Get a guy or gal from the track team to run up and down the court, aiming the parabolic at the players, then mix that live action with your sportscasters. Sporting events will really come alive.

Thanks Frank for a useful use for unused equipment. Email Frank Hertel at newman-kees-hertel-rf-eng@twc.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 44 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.

MUSIC SERVICES

(continued from page 14)

ing Forbes magazine, as a worthy challenger to Pandora and Spotify. Helmed by President/CEO Jim Cady, Slacker offers more than 200 "expert music curated" stations. That means they have actual human DJs, plus access to more than 13 million songs online.

Slacker is available on the Web and for smartphones, with billing and distribution deals with every major North American wireless provider, and as an installed option in cars. The new Slacker has more than 6 million listeners, with 3.5 million on mobile and 100,000-plus subs for its premium service.

\$9.99 Slacker Radio Premium has these features plus music, lyrics, and custom playlist creation on demand. For the basic \$3.99 per month, Slacker Radio Plus has no ads and ABC/ESPN.

SPOTIFY

With more than 24 million users, 6 million of them paying subscribers, Spotify.com is a big player in the online music space. Spotify's major hooks: Many musicians have publicly voiced their support for the service

As well, Spotify's integration with Facebook means that

Spotify subs can see what other Spotify users are listening to. (This said, a number of Spotify users have objected to their music choices being made public.)

The free Web service has ads; the Unlimited service (\$4.99/month) has no ads but is Web-only. Spotify Premium has no ads, all devices and costs \$9.99/month.

TUNEIN

Serving some 40 million listeners each month, TuneIn.com was founded as RadioTime in 2002 and became TuneIn in 2010. The company is headed by CEO John Donham. Unlike other music services, TuneIn's angle is to provide access to actual radio stations (AM/FM/Web) online, with the number of available outlets currently at around 70,000.

The critically-acclaimed (by PC Magazine and Macworld magazines among others) site also has 2 million programs available on-demand. Its platform is available on over 200 connected devices; vehicles made by BMW, Ford, GM and Tesla; on smartphones and tablets, smart TVs and even refrigerators.

The \$4.99 TuneIn app (android) allows DVR-type recording and playback of radio programs.

What new media music platform do you favor and why? Email radioworld@nbmedia.com with "Letter to the Editor" in the subject field.



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World Radio History

Inovonics 610 Takes on the Web

Finally someone builds a dedicated Internet radio monitor. Does it work?

PRODUCT EVALUATION

BY TOM VERNON

Many broadcasters monitor their Internet streams with consumer-grade Internet radios lashed to unbalanced-to-balanced audio and silence sensor boxes, or rely on their ISPs to let them know when

ing format, mono or stereo and original sampling rate) and time/date. There is also a level meter indicating 0 dBFS as peak level, useful in setting up encoders.

ALARMS

Audio outputs are available as balanced left and right analog and an AES digital, all through XLR connectors.

There's also a headphone jack on the front panel. Headphones are a welcome option for tuning up Internet audio

three external alarms can work with voltages up to 24 VDC. This breakout should be useful, because at most stations, various things need to happen, and different people may need to be notified depending on the nature of the failure.

The half-rack 610 Internet Radio Monitor may live on a desktop or be mounted in the optional rack adapter. One unit can be installed with a blank panel, or two 610s can be mounted side-by-side.



a stream is down. With the Inovonics 610 Internet Radio Monitor, these measures are no longer necessary. Winner of a Radio World "Cool Stuff" award, the 610 offers a boatload of professional features in a compact half-rack format.

The front panel contains a bright OLED display of all stream metadata including artist and title or program name, quality (streaming rate, encod-

processors in a noisy rack room. When headphones are plugged in, the front screen automatically will go to the headphone volume screen, and the jog wheel will adjust volume.

Most impressive are the alarm options on the 610. Front-panel LEDs indicate Internet, audio and stream loss. On the back, the same functions are presented as the collectors of NPN transistors. These

The 10 station presets enable you to compare your stream quickly with the competition. Get ready to be surprised.

Interfacing with the unit can be accomplished via the front-panel OLED display and jog wheel. The setup/operate tree is easy enough to use, but you'll probably want to complete the bulk of the setup via a Web browser and laptop or mobile device once the initial IP parameters have been entered.

Once you are done setting up the 610, you may save all settings to a PC as a hardware profile, useful as a backup, or for cloning multiple 610s.

TRACK OUTAGES

A peek under the cover reveals that the quality of construction for the 610 is up to Inovonics' usual high standards. It is also a testament to the advancements made in VLSI technology. A half-dozen ICs and a handful of other components is all that you need for the 610 to work

PRODUCT CAPSULE

INOVONICS 610
Internet Radio Monitor

Thumbs Up

- + Alarms for audio, stream and Internet loss
- + Analog L/R and AES outputs
- + Bright OLED display
- + Supports MP3, Ogg, Vorbis and AAC formats
- + Metadata display

Thumbs Down

- Can only monitor one stream
- 1/8-inch jack for headphone monitoring
- Only one email list for three alarms
- Alarm logs can only be accessed manually
- No way for the display to be on continuously

Price: \$990

For information, contact Lukas Hurwitz at Inovonics in California at (831) 458-0552 or visit www.inovonicsbroadcast.com.

its magic.

The surface-mount construction also means the unit is not user-serviceable. Since Inovonics recently upped its warranty to three years, that should not be a concern.

While the 610 can switch among 10 preset stations, only one at a time can be monitored. This could be an issue for stations with high-, medium- and low-bitrate streams, or clusters with streams for several stations. While the \$990 suggested price for the 610 seems reasonable, the cost of monitoring several stations could add up quickly.

Another useful feature of the 610 is the alarm log, which tracks outages. Tracked data includes the type of alarm (Internet/stream/audio), the station, time and date. Alarms are sent when there is an outage, and when the issue is corrected, allowing users to track the duration. This information is available on the browser and also may be downloaded as a CSV file.

There are many hacker opportunities here, so you may want to pull data from the CSV files and place it into a statistical computing program like RStudio, and into graphing environments like ggplot2 or Gephi, and generate your own informatics. With a bit of work and creativity, you may be able to develop better stats for your stream than those

(continued on page 24)

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INOVONICS

(continued from page 22)

that are provided by your Internet service provider.

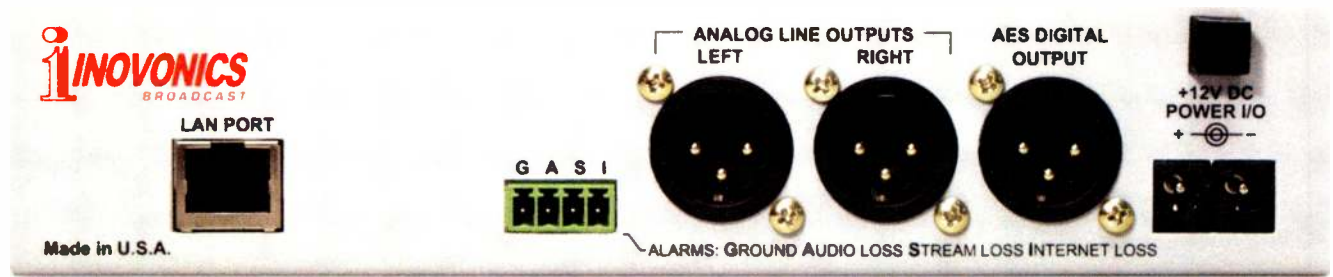
The bad news here is that this information must be polled manually. At present, there is no way for the 610 to send alarm logs automatically.

Another limitation of the 610's firmware is that there is only one email list, which receives notification for audio, stream or Internet loss. This can be a problem at college radio stations, for example, such as WDCV(FM) where the 610 was evaluated. If a stream gets lost, the IT staff and station engineer should be notified. If there is an audio outage, that is probably an issue within the station, and there would be no reason to bother the IT department.

According to an Inovonics spokesperson, the company hopes to tackle any issues like these in future firmware updates.

Additionally, there are only three fields for email addresses on the 610. Not to worry though, each of them can hold up to 64 characters, so if you separate addresses with a comma, you can squeeze several of them into the space that is provided.

The front display is useful in tracking your metadata, but its implementation



can be annoying. To prevent the OLED display from burning in, it goes dark with no use after a couple minutes. If you have your 610 password protected, you need to enter the password every time you want to get back in.

MONITOR

Although not their intended purpose, the 10 station presets on the 610 enable you to compare your stream quickly with the competition. Get ready to be surprised. Even well-known brands have streams with levels all over the map. Most display call signs, but not all. Audio quality also is quite variable.

Using the 610 to monitor other stations, however, is not always easy. The address that the ISP delivers the stream on is what must be entered, which is probably not the address you see on your browser. You may be able to look

at the code for the Web page and figure it out, but not always.

The 610 is also a valuable tool for setting up your Web audio processing. It decodes MP3 (32 kbps–320 kbps), Ogg Vorbis (32 kbps–500 kbps) and AAC (32 kbps–384 kbps) streams. To tune your stream accurately for the best sound, you need to listen to a decoded sample. Plugging headphones into the front of the Web processor and making tweaks can get you into trouble. We were able to make substantial improvements in the sound of our stream by monitoring the headphone output of the 610.

Sadly, the headphone jack on the 610 is 1/8-inch. This is a bit puzzling, since all the other jacks and features are professional quality. A standard 1/4-inch TRS jack would seem to be more appropriate.

Internet radio is transforming quick-

ly from a loss leader at many stations to a serious revenue source. Getting your Web stream to the next level means having a reliable way to evaluate sound quality and metadata, and be notified of stream problems when they happen.

The Inovonics 610 Internet Radio Monitor is the first professional product to address all of these needs. With a few hacker tweaks, the information that it provides can also be used to generate informatics, which will enable users to evaluate long-term trends in their stream's quality.

A regular contributor to Radio World, Tom Vernon has been active in the industry for over 30 years. He currently creates technical training materials, corporate newsletters and instruction manuals for several broadcast equipment manufacturers, working from his home in Central Pennsylvania.

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Budgeting for the Budgetless

Take a realistic look at where to put your (limited) resources

Somehow it doesn't feel right to receive 2014 budget questions already, but the reality is that a lot of companies are starting the planning process this summer. Sure makes vacation planning a challenge!

But enough about fun; let's dive deep into budget mode and see if we can jolt your brain into forward-thinking about monetary requirements to build a successful next year.

I once worked with a company that did "zero-based budgeting." Translation: They looked at the actual amount spent during the year, not the budgeted amount. This means that if you had \$100,000 budgeted for marketing but they only let you spend \$25,000 of that sum during that year, you could not put more than \$25,000 into your budget for the next year.

If your entire \$100,000 marketing budget had been cut during the year, then with zero-based budgeting for the next year, you would budget — yep, you guessed it — nothing. Follow this operation long enough and budgeting becomes unnecessary: Since you've spent nothing, you can budget nothing.

I bring this up because finance dudes (technical term) typically do look at "actual" spending when they are approving budgets, so it is vital that throughout the year you spend what you've got in each of your budget lines, or you could end up with less firepower the next year.

It's easy to convince yourself you're saving the company money — and indeed you might be for that year — but it's possible that the next year you'll have a competitor and no ammunition to fight because you out-smarted yourself.

COL INCREASES

I always start the budgeting process with salaries. Without happy employees, what do you have?

Most media employees have become accustomed to a 3 or 4 percent cost-of-living increase. I urge even small operators to think hard before taking away what little cost-of-living increase they offer. You may be better off with one fewer employee to allow raises for others who need to feel appreciated and happy.

Not that I'm advocating smaller staffs. Goodness knows most station staffs are small enough already. For talent, you may be better off considering ratings bonuses over standard increases. When talent hits it big, everyone wins.

Speaking of which, if you have talent contracts coming up for renewal, do you



Make sure everyone gets a slice of that pie.

It's easy to convince yourself you're saving the company money, but it's possible that the next year you'll have a competitor and no ammunition.

have an alternate talent plan in mind if negotiations don't work out? Have you considered how the incoming health care policy will affect your staff budget? Here are a few more benchmarks.

Research: Can you afford not to know what your listeners enjoy and what they detest? Even if you don't have enough money for perceptual studies, or



Stockphoto/ChuckPlace

music research, can you at least allocate enough for a few focus group sessions?

Software Licenses: Many a manager has neglected to investigate software licenses properly. Don't wait until a product becomes unsupported to realize you need budgeted money to purchase an upgrade. Be sure to ask your staff what they believe they will actually need. This doesn't mean you are obligated to make the purchase, but you should know how the people using the software think.

Marketing: You probably can't allocate much, so what you have you must utilize wisely. Consider putting up the dough for Twitter and Facebook advertising. Once you capture new social media

PROMO POWER



Mark Lapidus

users, you can continue to market to them over and over. It's the gift that keeps on giving.

Travel & Entertainment: You'll have at least a few corporate trips, right? Allocate a few bucks for meals schmoozing with influential locals.

Content/Wire Services: Everything from show-prep materials to on-air guests to networks.

Licensing: Fees to the people you hate to pay but can't live without.

Transmission: Costs change. Be sure and check.

Website: You're paying something for hosting, bandwidth and other tools.

Equipment: No doubt you are creating a separate capital budget. It is rarely due the same time as your operating budget, but the two really belong together because they require coordinated planning. It's a good idea to start it now even if it's due later.

Consultants: Put lots of money in this line because an outsider with a fresh perspective and creative ideas can help move you the needle. Allocate at least a gazillion/trillion dollars.

Mark Lapidus is president of consulting firm Lapidus Media. Reach him at marklapidus@verizon.net.

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PEOPLENEWS

The **Radio and Television Correspondents' Association** named Washington's WTOP(FM)'s Capitol Hill correspondent **Dave McConnell** the first recipient of its "Career Achievement Award for Distinguished Reporting on Congress."

Radio broadcaster **Cumulus Media** has appointed **John Gallagher** as vice president and market manager for the Toledo, Ohio station cluster. **Matt Spaulding**, who previously held that role, will take on the same position at the Ann Arbor, Mich., cluster. **Ed Glab** has stepped down from his engineering duties at Cumulus-owned **WLS(AM/FM)** in Chicago.

SiriusXM Radio has appointed **Frank Flores** as



Dave McConnell

vice president of Hispanic marketing and sales.

Scott Taylor of Zarephath, N.J.'s **WAWZ(FM)** was sworn in as the **New Jersey Broadcasters Association** chairman, alongside other new NJBA officers and board members for 2013-2014. Also installed were: Vice Chairman **Greg Janoff**, Vice Chairman **Dave Coskey**, Secretary/Treasurer **Phil Boyce**; At-large board members **Robert McAllan**, **Bob Dunphy**, **Charles McCreery**, **Jeff Warshaw**, **Deon Levingston** (NYSBA Chairman); Affiliate/Life Members **Pat Delsi**, **Bill Saurer**,



Bernie Wise

Joe Bilotta, **Andy Santoro, Jr**, **Elizabeth Christopherson**, **Art Camiolo** (Philadelphia affiliate), **John Mozes** (public/educational member), **Dan Spears** (associate member representative), **Dick Svetits** (engineering representative); Board Counsel **John Garziglia**; and Pension Advisor **Michael Welger**.

Harris Morris, CEO of **Harris Broadcast**, left the company July 3.

The **International Broadcasters Idea Bank** recently presented an award to **Bernie Wise**, of **Energy-Onix**, for his outstanding contributions to the broadcasting industry and his longtime support of the Idea Bank.

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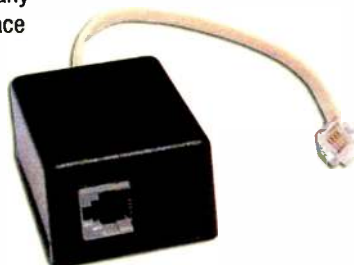
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Looking for a broadcast excerpt of a San Francisco Giant's taped off of KSFO radio from 1959, interviews with Willie Mays, Dusty Rhodes & some play by play excerpts, also features a homerun by Willie Mays and Felipe Alou stealing second base, running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

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READER'S FORUM

ALL-DIGITAL AM? CHECK THE MATH

Regarding the article "All-Digital AM Signal Called 'Solid' in Testing" (May 8):

When IBOC was just a fancy laboratory test, I stated that I saw a day when the digital-at-all-cost boys would make an attempt to force this digi-disaster on AM broadcasters.

They were successful in getting the FCC to allow broadcasters to use IBOC voluntarily at night. We saw what an utter failure it was, due to skywave interference and other reasons, so much so that many large-city AM powerhouses refused to use it at night or abandoned it altogether, such as Chicago's WLS did.

All I know is that the term 'AM sunset' is particularly applicable if an all-digital modulation is mandated.

- Jerry Arnold

Instead of admitting it was a failure, what did the folks at iBiquity and their financial partners CBS do? They claimed it was due to "not enough injection." This, after assuring us that this was the fix-all to every problem AM broadcasters had!

One letter went as far as scolding those of us who had solid engineering reasons why IBOC wouldn't work, especially at night, that "any AMer who had a 100-watt

nighttime authorization ought to be all over IBOC."

I made an editorial reply to this statement, using (dare I say?) engineering mathematics to prove my point using the writer's own 100 watts of carrier power. Due to the "sort of" forward error correction format that IBOC employs from the lower to the upper sideband, the amount of IBOC transmitted with their then-standard injection amounted to a few milliwatts, which even in a laboratory environment would not give reliable coverage more than a few hundred yards from the antenna.

So now I learn that the boys are giddy about allegedly having a "solid" all-digital signal from a 10 kW transmitter on daytime at a distance of 13 miles — approximately 21 kilometers. Maybe I am again missing something, but assuming a quarter-wave antenna over average soil, 1 kW would produce a field intensity of 305.768 mV/m at 1 kilometer — 10 kW (the power given in the article) would therefore produce in the same antenna a field intensity of 966.023 mV/m.

I took the liberty of rounding the 20.9 kilometers (13 miles) referenced in the article to 20 kilometers, about a 4 percent change in their favor.

Using a frequency of 1 MHz, and assuming a good ground conductivity of 6 mS/m over the 20 kilometers, the resultant field intensity would be a robust 19.338 mV/m.

Why all the math?

Well, even the poorest quality Radio Shack transistor radio you can buy will clearly receive a 2 mV/m signal. What all this means is the digi boys are once again whooping it up for a modulation scheme that still requires 19.7 dB more signal to provide intelligible audio at the same distance.

And this with a 100 percent digital signal — no 5 kHz AM bandwidth left to "blame" for IBOC's dismal showing. To put it another way: Without changing AM power



levels, each station forced to go to an all-digital modulation will substantially lose coverage.

Was I prophetic when I predicted that there would be some who would begin to demand the FCC mandate this? Perhaps. Perhaps not. All I know is that the term "AM sunset" is particularly applicable if an all-digital modulation is mandated.

Jerry Arnold
Retired Broadcast Engineer
Terre Haute, Ind

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Valerie Geller
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READER'S FORUM**LOST IN TRANSLATION**

A former radio station employer of mine has three FM translators that relay a 2500-watt AM on the high end of the dial. When I worked there 12 years ago, the AM station did not have a good signal, but it covered the same area that the translators now cover.

Of course, the FMs sound much better than the AM, and the format is news and talk.

I cannot speak about translators across the country, but I have been throughout the eastern part of Pennsylvania (where I live) within the past year. And in several towns, I'm finding the same thing: One-to-three translators helping out one AM.

I read Radio World religiously, and I don't think I've seen this subject come up. If a 25- to 100-watt translator can do a better job than the AM it is rebroadcasting, why doesn't the FCC declare these stations "LPFMs" and take the AM off the air in order to clean up the band? (And why does the FCC award extra licenses for the same station, serving the same area?)

This station and its three translators are all within 10 miles of my home and I can hear all four stations doing the exact same programming. Isn't this overkill? As I pointed out, this is happening throughout the state.

A bona fide LPFM came on the air about eight to 10 miles from my home. It is closely situated between two higher-powered NCEs and it is hard to pick up. I suspect it can be heard clearly two miles from its transmitter, but not farther. The translators are doing a better job. (And they have a translator, too!)

Not too long ago, a person applied for, and got, a graveyard AM assignment. It appears (to me) as if it was for the sole purpose of purchasing an FM translator, moving it closer to the city of license, and putting the programming on it.

So what does he or she need the AM for?

I'll go a step further: A few of our Class As and Bs have applied for and gotten translators. The FM radio dial here sounds like 50 stations, 3/4 of which are the same programming. However, the AMs sound horrible and are nearly unlistenable.

Something just doesn't seem right here.

It seems to me that a translator, which serves the same contour as its AM, is a radio station in and of itself, and does not need to be duplicated. Since they are lower power, more stations can be placed on the same channel elsewhere.

I have some solutions but I'd be interested in what Radio World readers think about the difference between translators and LPFMs, and where they leave the AM stations they rely on for their programming.

Carl M. Van Orden
Chairman

New Jersey Radio Museum
Lake Ariel, Pa.

MUCH ADO ABOUT THE VU

This is in reference to the interesting and informative article in the May 8 issue by Oliver Berliner ("The 'vu' Meter Legacy Shines On"). The author gives the history of the original meter movement, the impedance matching of the meter circuitry, and voltage calibration for the classic volume unit meter and the original instrument designer.

However, I was surprised that he made no reference to the seminal document, "A New Standard Volume Indicator and Reference Level," published in the January 1940 issue

(Volume 38, Number 1) of the Proceedings of the IRE.

This 16-1/2 page document by Chin, Gannett and Morris details the previous audio signal level measuring devices, the need for a new standard meter to be used for audio program distribution, desired meter characteristics, the evaluation and testing methods used on existing and the proposed new instrument and, finally, the electrical and mechanical specifications of what we know as the reference vu meter assembly.

Although Mr. Berliner indicates that the frequency response of the vu meter he describes rolls off at 10 kHz, the IRE document states that response is not to depart from that at 1000 Hz, by more than 0.5 dB between 25 and 16,000 Hz, with no range limit given. My meters extend well beyond that range.

As pointed out, the standard includes even the exact color for the dial. And the design of the spade at the end of the pointer was based on user preference responses. Dynamic characteristics required that the meter pointer rise to the 99 percent within 0.3 seconds and then overshoot to between 101 percent and 101.5 percent, when a continuous 1000 Hz signal was applied of such RMS voltage to give a 100 percent or 0 vu indication.

The pointer decay time when such a tone signal is removed is not specified. The 100 percent or 0 vu point is to be at 71 percent of the scale length.

The letters vu or VU are not printed on meter dial face shown in the IRE document, nor are they on the Weston instrument. However, Simpson did print upper case "VU" above the scale ends on its similar-styled meter.

The meters shown on a mixing console advertisement in one of your sister publications had meters with "VU" printed on the dials and pointers with straight ends without the spade design. One would wonder if these meters would meet the very specific required rise time, overshoot and the damping of the reference vu meter.

One of the major considerations in the reference meter was to have a passive instrument that did not require an amplifier or external power supply, but which would have a negligible effect on the circuit being metered.

The meter was not to cause more than 0.2 percent harmonic distortion of the signal within the circuit being bridged. Having installed many Weston and Simpson meters together with the specially designed matching Daven brand step variable attenuator, I have kept a copy of the original IRE document handy for reference.

I highly recommend anyone having an interest in the full history of the development of vu meter to obtain a copy. One source is the AES URL found at radioworld.com/links.

John Reiser
Retired Broadcast Engineer
Mount Vernon, Va.

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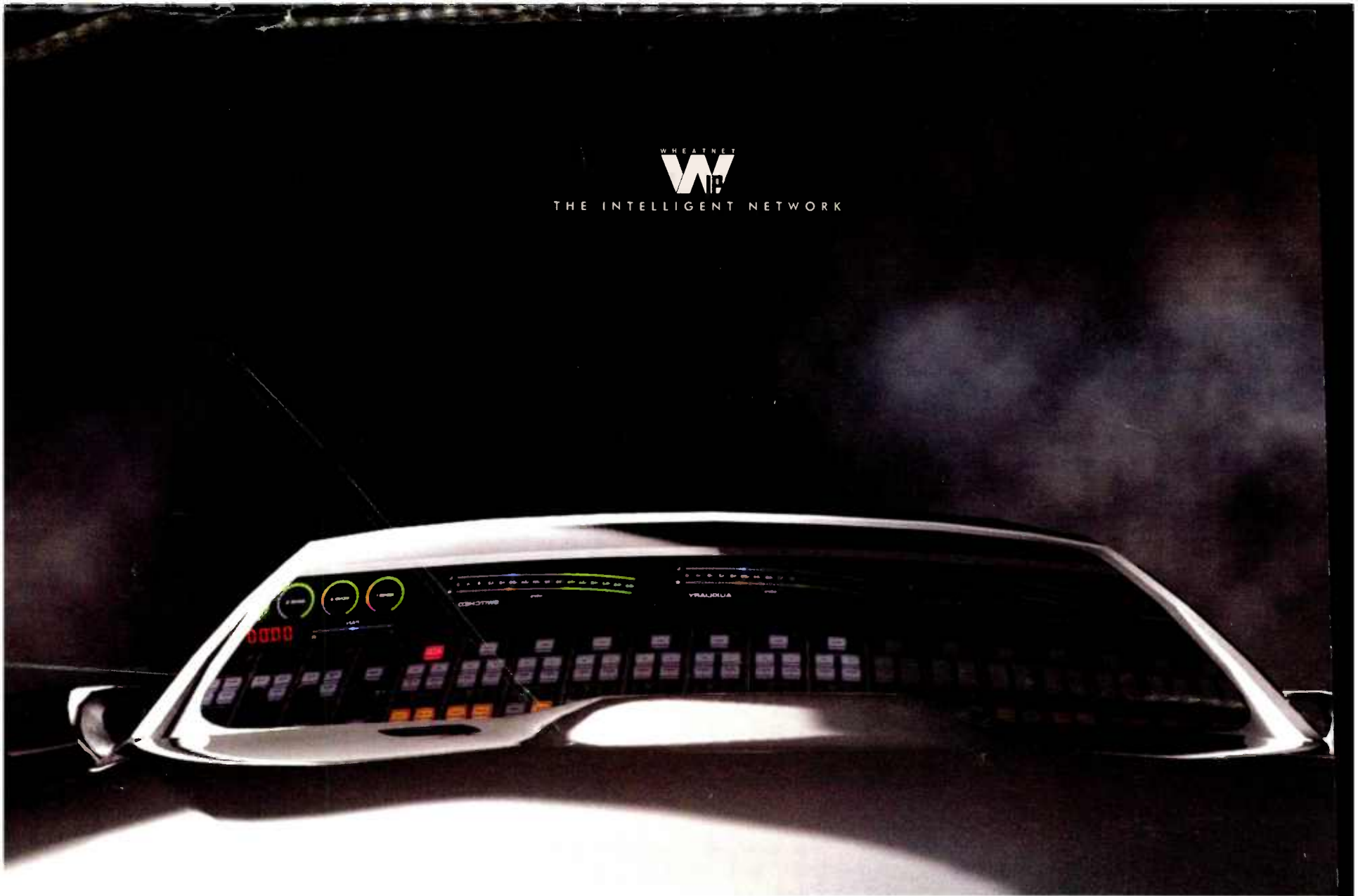
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