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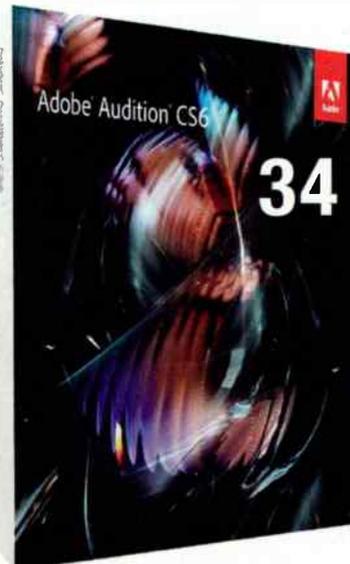
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Alabama Broadcasters Association Names 2012 Hall of Fame Class

The Alabama Broadcasters Association will induct its 2012 Hall of Fame class on Aug. 11, 2012, during the group's annual convention. Inductees are chosen for their contributions to the broadcasting industry, civic and community involvement. Under these guidelines, five broadcasters whom the Alabama Broadcasters Association has never honored, including the 2012 Broadcaster of the Year, will be inducted into the Hall of Fame. Those names include Larry Wilkins, CPBE CBNT AMD, of

Prattville, Carmen Brown of Mobile, Everett Holle of Birmingham and Bob Howell of Montgomery.

The fifth inductee, Roy Clem, general manager, WVUA-TV, Tuscaloosa, was revealed as the 2012 Broadcaster of the Year at a luncheon on Aug. 11.

Tommy Lee of Albertville/Gadsden was named the ABA's 2011 Broadcaster of the Year but, because there was not a Hall of Fame event last year, he will be recognized at the 2012 celebration.



WGBH Acquires PRI

Public Radio International (PRI) has been acquired by and will be an affiliated company of WGBH. PRI, the national content producer, network and service provider for public radio, and WGBH, the award-winning public media content producer for radio, TV and the Web, will come together to pursue a shared vision for developing and funding station-based and independently-produced content for public media including an editorial diversity from producers nationwide. The two organizations will leverage their combined resources and expertise to create scale and efficiencies to provide public radio audiences with more content choices and engagement opportunities; increase public radio stations' and producers' ability to address audience needs and interests in today's multi-media, cross-platform digital world; and support public media's creative communities.

Tom Joyner to Keynote 2012 Radio Luncheon

Nationally syndicated radio host Tom Joyner will be the featured speaker at the 2012 Radio Show Luncheon, to be held Sept. 21 during the 2012 Radio Show, jointly produced by the National Association of Broadcasters (NAB) and the Radio Advertising Bureau (RAB).



Influential radio personality, entrepreneur and philanthropist Tom Joyner has earned almost every top radio award in the country, including induction into the NAB Broadcasting Hall of Fame in 2000, and the title "The Hardest Working Man in Radio." His number one syndicated urban morning show features a mix of compelling content, humor and music, reaching more than 8 million listeners in 105 markets.



The 2012 NAB Marconi Radio Award finalists were announced, including Legendary Station, Personality of the Year, and Station of the Year by market size and format.

The 2013 NAB Show opened its call for speakers. Proposals are due by Oct. 19, 2012.

AVnu Alliance unveiled a new certification logo. The certification process helps assure that once a product is certified, it will interoperate with other AVnu-certified AVB devices.

FCC Sets 2012 Regulatory Fee Schedule

In a report and order, the Federal Communications Commission set its regulatory fees for its 2012 fiscal year to raise \$339,844,000. The FCC is currently reviewing its process and methods to assess and collect regulatory fees in the future. The fees will be collected in September 2012.

The FCC determines the fees a station owes based on the station's power level and type of service, and the population served. The 2012 fees will use the 2010 Census data, which may affect the amount owed by some stations. Broadcast Auxiliary Services are also subject to regulatory fees.

Information on how stations can pay the fees is posted on the FCC website at transition.fcc.gov/fees/regfees.html.

Radio station fees are on page 19, in Attachment C of the FCC's rule-making, which can be accessed here: hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-12-76A1.pdf.

FIND THE MIC AND WIN!

Tell us where you think the mic icon is placed on this issue's cover and you could win Hosa USX-100 mic-to-USB adapter. Send your entry to radio@RadioMagOnline.com by Sept. 10. Be sure to include your guess, name, job title, company name, mailing address and phone number. No purchase necessary. For complete rules, go to RadioMagOnline.com





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Beyond the Backup



We work with data. Tons of it. Scads. Think back to precomputer operations when we didn't worry about server space. In those days we needed file cabinet space because we stored so much paper. Now that nearly everything is digitized, we probably save more than we need to, but we are making backups to protect ourselves from losing the data during a failure. Or perhaps so we think.

I'm sure you have a backup system in place on your network. Because your network data is the life of your business operation, I'm sure you check that it has run nightly or weekly as its scheduled. But even with a fixed system in place, are you really backed up?

The other day I was updating our Today in Radio History page on the *Radio* magazine website. I constantly receive updates to the information posted there, so I frequently access the content management system to update the information. I was working through my usual steps, but I decided to remove a redundant element on the page. I work in this CMS all the time, so I'm very comfortable in checking boxes, updating entries and clicking the appropriate boxes to make the changes.

Perhaps I get too comfortable.

As I went through the steps to delete the element, I clicked a button by mistake. No problem. I'll click cancel and return to the previous step. Except I didn't click cancel. In a moment of false security I clicked delete. And not delete element, but delete story.

The resulting prompt asked if I was sure I wanted to delete the entire story. Having seen these prompts countless times and feeling too confident in my rapid pace, I didn't read the actual prompt because I thought I knew what I was doing. I clicked yes.

That was the moment the world stopped spinning, my heart stopped beating and everything went silent. Wait; did I just do what I think I did?

Yes; I did. Great.

Once the stunned sensation passed (in seconds) and before the anger at myself set in, I quickly considered what I could do to reverse my error. I know the entire website is backed up often. I was sure I could call someone to have the data retrieved in some way. I had never done that so I had no idea how involved the process would be or how long it could take. The history page is a popular one as well, and I didn't want to have it show the dreaded 404 error for more than a few minutes.

Then I realized I might have an instant backup, albeit a temporary one. I had the *Radio* magazine website open in another browser, although not on the history page. I clicked the back button and the page was still loaded in the cache. I instantly saved the HTML. Now I had the data I needed to reconstruct the page, which took about 1 minute.

Needless to say I was relieved.

But this experience reminded me about the importance of not only having a backup, but being able to access it quickly when it's needed. At a station, this could be a processor setting or a console configuration. If something happened, would it take you minutes, hours or days to reconstruct the file and return to regular operations?

Our history page is the result of ongoing updates, and to reconstruct it from scratch would take considerable effort. I now keep an instant backup handy so I can at least create an incremental backup in a short time if needed. Perhaps you should inventory your data and determine what critical data you should have for instant access. **0**

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World Radio History



Station Apps for the Bottom Line

by Kevin McNamara

While researching this article I came across an article in Digital Music News (digitalmusicnews.com) titled “The Smartphone: Where FM Radio goes to die.” The article questioned the logic of the lobbying to force manufacturers to include FM in all smartphones. However, that isn’t the subject of this article, but the title may be better applied to smartphone applications, or more specifically how radio broadcasters will utilize and actually make money with apps.

According to a recent study by the Pew Research Center’s Project for Excellence in Journalism titled “The State of News Media 2012,” terrestrial radio is still the second most dominant medium (after television), but there is cause for concern for radio’s future. A 2011 survey by Arbitron indicates radio is still used by 93 percent of Americans over age 12, down 3 percent from 2001; however, smartphone usage is up 31 percent and online radio is up 28 percent over the same period. I won’t discuss trends in the media landscape, but statistics all seem to indicate people’s use of a smartphone platform for entertainment is far outpacing the use of terrestrial radio. A Nielsen study shows smartphones comprise 54.9 percent of mobile subscribers as of June 2012. They also note that two of three mobile phones purchased are smartphones.

None of this should be a surprise and certainly broadcasters are stepping up by offering online streaming through Internet and custom apps. A recent report by the Radio Advertising Bureau shows online revenues for broadcast stations has trended from \$480 million in 2009 to \$709 million in 2011. Overall this is good news; however, the same Arbitron report noted that in 2011, 34 percent of Americans listened to either AM/FM or online only (such as Pandora) streaming services. Of the group

that listened to both (about 9 percent), listeners to AM/FM streaming stayed level while online-only listenership rose.

It’s not hard to understand the reason for this trend. Most online-only content providers have fewer interruptions from advertisers, offer the ability to tailor and/or give listeners some interactive control over what is played and in some cases there may be some degree of interaction



Waze adds social media to traffic data.

with other listeners through social networking.

The question is how can radio utilize the Internet and smartphones to maintain and enhance their revenue streams for the future? One possibility would be the creative use of apps. I’m not talking about apps to play streaming audio, that was clever in 2010, based on this current research it doesn’t appear radio will stay competitive with the Internet-only services in the future. Programming alone will not compel listeners to your sliver of cyberspace. Let’s explore a concept for the “killer” app that will go beyond streaming audio.

DO WHAT RADIO DOES BEST

I’ve said in past articles that, in my opinion, terrestrial radio has largely abandoned the one

thing that made it great: localism. Perhaps even more relevant, it was a catalyst to bring like-minded groups of people together. Within their listener bases stations created the buzz and excitement that would draw listeners to call, write and attend events. I don’t see that energy anymore. Yes, I get that people will still come to an event, but it’s usually to see a particular band perform, meet a celebrity or a giveaway, but only in very few cases does it have anything to do with meeting personalities. This isn’t the same vibe as we saw growing up in the 1950s through the 1970s.

The word “crowd-sourcing” has only been around for a few years, but in many ways describes what radio used to do very well. The term is generally applied to some Web-based application where users can contribute and share some type of information that is relevant to the purpose of the Web application, i.e. Wiki (general information), Spotify and Ping (music) and Internet forums to name a few.

In the case of radio we can equate the “crowd” to be the listeners, who would call the station to request songs, acknowledge birthdays, possibly sharing something news worthy, reporting traffic problems or weather events. In many ways the station was “fed” relevant, local and current information by this “crowd.” The major difference between these uses of crowd-sourcing is that radio used it by a local audience, where Web applications have few geographic bounds. I see stations making feeble attempts using Facebook or Twitter to keep in touch with audiences, but it is usually nothing more than a billboard to subscribers, hardly an interactive platform.

I recently discovered a free application called Waze from a company in Israel. This may be one of the most useful applications ever. According to its Wiki page, “Waze differs from traditional GPS navigation software as it is a community-driven application and

learns from users' driving times to provide routing and real-time traffic updates. It is also free to download and use, as it gathers map data and other information from users who use the service. Additionally, people can report accidents, traffic jams, speed traps, police and can update roads, landmarks, house numbers, etc. Waze also helps users find the cheapest, closest gas station around them or along their route."

There is also a contest-type feature that permits users to accumulate points. This application was made for radio! I don't understand why broadcasters aren't all over it. The first requirement of the killer app, make it interactive with not only the station, but other users and acknowledge users as much as possible. Here are my ideas on the killer station app.

Add a retail component: I think Amazon is hands down the best retailer in the world. It is also recognized as the company with the best customer service. One of the most useful

features of retail websites are the customer reviews and ratings. I generally look at them to guide my buying decisions for most purchases. Instead of deluging listeners with a barrage of advertising spots for 5 minutes, try a different approach, such as getting information about their age, income levels and buying patterns, then tailoring ads that would be of the most interest. Perhaps create a retail portal inside of the app that permits the listener to buy and review something they just heard? Maybe they could create reviews of any local business. Look at partnering with a retail directory-type site such as YP.com. The second requirement of the killer app, target advertising and make it easy to buy directly from the Smartphone.

Understand the listener's wants and needs: I'm fascinated that there is still a need for any station to perform music testing when there is a ton free data that will tell you the popularity of songs based on downloading. Giving users the ability to rate music, personalities and even

spots would be valuable information. The third requirement for the killer app, let the listeners provide real-time research data.

Give the listeners what they want: Ultimately to compete with Pandora or some of the other Internet only services, you must allow each user to create their personal playlists. Nobody wants to hear the same 30 songs in rotation anymore. I think there is a way to keep the excitement that radio has been able to offer since the 1920s while delivering different content. Last killer app requirement: *Let the listener create his own experience.*

I'm sure you can think of additional ideas, but the bottom line is, increasing amounts of people will be getting their entertainment from a smartphone and less from the radio in the dashboard. To survive, owners and managers must start thinking like they are a new website start-up and less like a traditional operation. **Q**

McNamara is president of Applied Wireless, Cape Coral, FL.



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by Lee Petro

Updates on Regulatory Fees, Tower Registration and MAD

It's the dog days of summer in Washington, when the powers-that-be leave town to avoid the warmth and humidity. The FCC hasn't issued any major orders this month, so it seems appropriate to do a regulatory potpourri of various and sundry matters.

Annual Regulatory Fees: The FCC released the final table of annual regulatory fees, which will be due in September. The actual deadline for the submission of the fees has yet to be announced. Typically, the filing window opens in August, and the FCC permits filing up through the deadline in September. Just as it did last year, the FCC announced that it will not be sending out bills to licensees, but the fees can be checked at fccfees.com. This website has yet to be updated with the 2012 fees, but we expect that it will be open for business by the middle of August.

It is important to check that the FCC's records are accurate, especially if you believe that you are exempt from paying annual regulatory fees. As in past years, each licensee should pay close attention to the information the FCC has in its records, and remember to include broadcast auxiliary licenses, which have not been associated in the FCC's records previously.

Interestingly, the FCC will, for the first time, require parties request a

reduction, waiver, refund or deferment of the regulatory fee to submit the request electronically. However, the FCC has yet to establish the mechanism by which the requests can be submitted, which may be one reason why it hasn't yet opened the window.

Coupled with the establishment of the 2012 regulatory fee payments, the FCC released a notice of proposed rules looking into the methods associated with the calculation of the regulatory fees. Congress directed the FCC to collect regulatory fees based on the number of times its employees (full-time, or their equivalent) have spent on licensing matters associated with the main licensing Bureaus, Media, Wireline, Wireless, and International, and considers the projected number of regulatory fee payors in each category.

The problem is that the FCC has used the same workload figures that were calculated in 1998. Since it is likely these figures have shifted, perhaps significantly, since 1998, the FCC is concerned that if it simply recalculated the workload, some licensees might suffer from a new form of "bill shock." Moreover, since 1998, the Commission has become more interdisciplinary, so that employees working on incentive auctions could be said to be working on both Wireless and Media matters, and there is no current method for parsing out the workload.

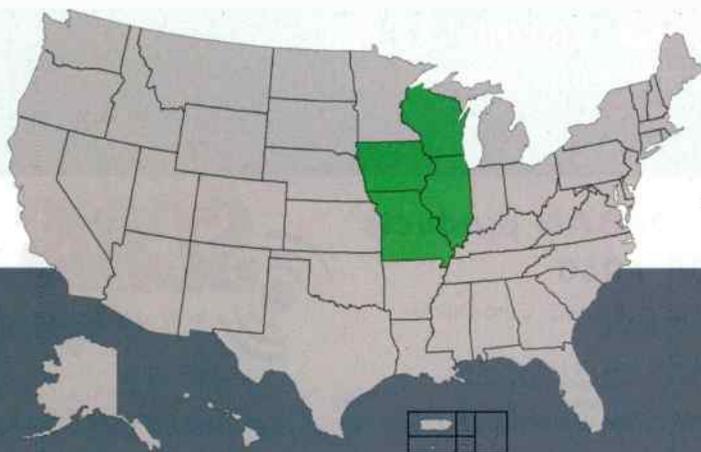
Thus, the FCC is seeking comment on how to equitably take into account evolving regulatory shifts in the industries regulated by the

FCC. At publication, the filing date for comments had yet to be set. Television broadcasters may want to pay close attention to this issue, since one can assume that the work associated with incentive auctions will be taken into account, and it is reasonable to consider whether broadcasters who face the repacking of their spectrum must also pay for the time it takes the FCC to implement the new rules.

Tower Registration Update: In June, we addressed the new FAA lighting guidelines and the FCC's implantation of the new antenna structure registration process. As publication, the FAA has yet to issue the new guidelines. Moreover, the Commission has yet to make the new ASR registration form available.

MADness Update: In July, we reviewed the ongoing lawsuit between Mission Abstract Data and broadcasters regarding claims of patent infringement. At that time, MAD had requested that the stay in the proceeding be lifted in light of a Patent Office action affirming aspects of certain patent claims. Broadcasters had objected to the lifting of the stay, referencing the submission of a further re-examination request regarding one of the patents, and the intention to submit a request for re-examination of the other patent. In early July, MAD submitted its reply, arguing that the defendants in the case were thwarting its efforts to license the technology addressed in the patents, and urged the court to deny the stay. As of publication, the District Court has not acted on the stay request. 

Petro is of counsel at Drinker Biddle & Reath, LLP. Email: lee.petro@dbr.com.



DATELINE

August 16, 2012: Stations in Illinois and Wisconsin continue running License Renewal Post-Filing Announcements, also on Sept. 1 and 16. Stations in Iowa and Missouri continue running License Renewal Pre-Filing Announcements, also on Sept. 1 and 16.

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Worldcast Systems APT Horizon

Horizon from Worldcast Systems. This single rack unit is a full-duplex, two channel stereo codec designed to enable real-time transport of broadcast quality audio over IP networks, using linear audio or Enhanced Apt-x coding. A 10Base-T/100Base-TX RJ-45 interface is used for both audio transport and remote control/supervision. Network quality of service is provided using DiffServ (though keep in mind that QoS must be supported end-to-end on the network to truly take advantage of this feature). Some other nice features of the Horizon are its available audio bandwidth: 10Hz up to 24kHz (obviously dependent upon the algorithm chosen); four optically coupled GPIO inputs, and seven relay-closure outputs; event alarm and logging; and support for SIP and SDP, which means you can communicate with other manufacturers' codecs as long as they're N/ACIP compliant.

The WWFM studios have access to the public Internet through two separate ISPs: Comcast and Verizon. Software from Radware is used to ensure the streams continue make it to the public Internet, even in the event of a failure of either of those two connections.

WWCJ and WWPJ each have their own unicast stream served by the Horizon used for JazzOn2. The Horizon used to encode the Classical Network is working a little harder: It serves up unicast streams for WWPJ, WWCJ, WWNJ, the New York City stream, Blue Ridge Cable in the Eastern Pennsylvania region, translator K216FW in Steamboat Springs, CO, as well as the Philadelphia stream.



Worldcast Systems APT Astral

At the far ends, Mercer uses the APT Astral from Worldcast Systems. This 1RU device comes standard with the ability to provide audio bandwidth of 22.5kHz, using algorithms such as linear PCM (16- and 24-bit resolution) as well as Enhanced Apt-x (also 16 or 24-bit resolution). It also supports MPEG Layer 2, Layer3, G.711 and G.722, and it's N/ACIP compliant. In addition to a serial data path, which could be used for RBDS or PSD (for HD radio), it has eight GPIO inputs and outputs. User configuration of the Astral allows for management of network conditions such as packet size, buffers and QoS.

Mercer has plans to install APT Horizon Nextgen codecs at both the New York and Philadelphia affiliates to the Classical Network. This will allow for the implementation of Surestream, a feature from APT that makes use of two independent (unicast) streams, each carrying the same data, received by two different physical-layer connections on the receive side.



Our next example of network distribution via IP is that of New Jersey Public Radio. This network originates at the studios of New York Public Radio (WNYC AM/FM and WQXR) at 160 Varick Street in New York City. (NJPR is comprised of four of the nine stations that made up the old New Jersey Network, which ceased operations at the end of June 2011.)

NJPR uses what most would consider more traditional means of program distribution for primary links, much of it remaining

from the NJN facility; however, alternate links are done via IP, through various link types and equipment.

Stations making up the NJPR network are WNJO Toms River; WNJT Trenton; WNJY Netcong, NJ; and WNJP Sussex, NJ. The primary links to WNJT, WNJY and WNJP are via RF links that remain in place from the NJN days; they originate from Warren, NJ, which is about 16 miles WSW of Manhattan. From Warren, looking northeast, both Netcong and Sussex are served by a 950MHz radio shot. NJPR program makes its way from Warren to Trenton over a TV ICR belonging to New Jersey's Public Broadcasting Authority.

There are two links from Varick Street to Warren; the primary is a T1-based system, and the alternate link is a unicast stream, over the public Internet, that is encoded by an APT Horizon.

Alternate links for NJPR are via the Tieline Bridge-IT. This is a half-width, 1RU full-duplex codec that will encode in linear PCM or by Tieline's proprietary algorithms such as MusicPlus (which will provide up



Tieline Bridge-IT

22kHz of stereo audio with as little as 96kb/s) and Tieline Music (up to 15kHz of mono audio with 24kb/s). Optionally, the unit is available with Enhanced Apt-x, LC-AAC, HE-AAC version 1 or 2. Tieline's SmartStream IP software automatically manages jitter buffering and forward error correction. The unit can be configured from its front keypad and LCD display, or the Web-based GUI for all programming functionality. It has two GPIO inputs and outputs, as well as RS-232 capability for local and remote control of equipment at either end of your codec link.

One Bridge-IT at Varick Street encodes three separate unicast streams; one for Trenton, one for Netcong, and one for Sussex. A second Bridge-IT at Warren encodes an alternate stream for WNJO in Toms River as main link from New York. Each transmitter site uses a Bridge-IT for decoding of the unicast streams.

NJPR uses the Tieline Codec Management System as well. With this, it can remotely change the configurations of all the Bridge-Its so if for some reason the multi-unicast server at Varick Street fails, NJPR can reprogram the network so the unit in Warren will now become the multi-unicast server, and redirect all the receive Bridge-Its to look at Warren instead of New York.

The WNJP transmitter site in Sussex was a bit more of a challenge to the engineering staff of NJPR. There are no last mile wire or fiber lines to that transmitter site; so, DSL was installed at the facilities of WSUS in Franklin, NJ, (where there is line-of-site to the transmitter) and the group put its own 5.8GHz radio link in for the last mile. This radio is made by AvaLan and operates as an Ethernet bridge.

ABOUT IP MULTICAST

Our prior two examples of network distribution used *multiple unicast* streams over IP networks. This is fine if you intend to serve a limited

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The new ROC console from Logitek

When Logitek introduced its first ROC console back in the 1990s, it marked a revolution in audio console design. One of the industry's first router-based digital consoles, the original ROC boasted simple wiring and access to multiple sources at each fader.

Over the years, the router-plus-console Networked Audio concept has become the standard in console architecture. Although the original ROC was retired years ago, Logitek has continued to develop systems for both TDM and AoIP audio networking. The new ROC takes the best of the original design and pairs it with the latest technology and styling.

Available in multiples of 6 faders (up to 24), the ROC is housed in an attractive tabletop enclosure. Durable Penny & Giles faders, OLED source indication and intuitive controls make the ROC a natural for on-air, production rooms or even in temporary studio setups. Two monitor feeds, front panel headphone connection and user-assignable softkeys will please even your fussiest operators.

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number of clients from one encoder; but what happens when you want to serve dozens, hundreds, or even thousands of clients from one source? The typical resources of a radio station, or network, would not support that, and clearly, it seems that there must be a better way. And, there is: It's known as IP Multicast.

IP unicast is a one-to-one connection between client and server (or audio encoder and decoder in this context). Recall that an IP "broadcast" is a message sent out on a LAN segment meant to be read by all hosts on that segment—like an ARP request. An IP multicast message is one meant to be read by some of the hosts on the network—those that have joined a multicast group. Each host that wants to decode messages of a particular group is told to listen for messages that are sent to a particular destination address by the originator. That destination address will be in the multicast range of IP addresses 224.0.1.0 through 238.255.255.255. The Internet Group Management Protocol (IGMP) runs between hosts and their immediately neighboring multicast routers; the mechanisms of the protocol allow a host to inform its local router that it wishes to receive transmissions addressed to a specific multicast group.

So, to make use of IP multicast to distribute network programming, it's clear that the IP network you intend to use must support multicast from end to end. You would work with your network provider to determine this. Now let's take a look at a couple of examples where this is being done.



CKHL (YL Country) and CKKX (KIX 106, hot AC format) each have multiple transmitters located at six separate sites near Peace River, AB (about 250 miles northwest of Edmonton). The end-to-end physical links are wireless, and the local ISP is Wispnet.

(Wispnet is built on top of the wider facilities of Alberta Supernet, which you might find interesting in and of itself.) The handoff at each location is a Layer-2 switch providing a 100BaseT connection.

The encoder used for both the county and hot AC formats is the single rack unit SupriMAX from Musicam USA. This is a modular system, and it can support up to four IP audio modules. The modules themselves are derived from the Suprima line; they can generate multicast (as in our current example) or unicast streams. The integral Ethernet port (per module) is used for both the stream output and management. Each module can be controlled via a Web browser, or the CCS management software (which allows for simultaneous control of multiple Musicam codecs). Each module has stereo analog input/



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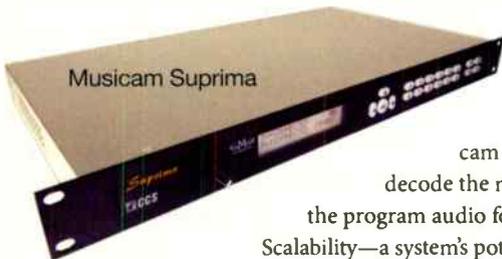
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output connectors by way of a DB15 connector; AES inputs/outputs by way of a DB9. The card comes with the following algorithms: PCM, G.722, Musicam MPEG1/2 Layer II/III, MPEG2/4 AAC LC, MPEG4 AAC LD, and Apt-x (Standard and Enhanced 16, 20 and 24 bits). The unit will pass RS-232 data up to 9600 baud, and includes four configurable GPIO inputs/outputs. It has a jitter buffer that will correct for up to 500ms of jitter in the IP connection; the frame size is configurable to give flexibility when adjusting the delay and bandwidth used; and it comes with a test tool that allows the user to check bandwidth, delay and jitter of the connection. This information can be used



to adjust the streaming parameters and so on, to obtain the best quality in the real-time audio reception.

At the far ends, Musicam Suprima codecs are used to decode the multicast streams, delivering the program audio for subsequent transmission.

Scalability—a system's potential to grow in terms of the number of users, but without a change in its basic architecture—is very evident in our next and final example.

In 2010, Rick Hunt, the VP and director of radio engineering for Entravision, started looking for a replacement for their legacy SCPC satellite



distribution system. Entravision already had AT&T MPLS circuits between their Los Angeles facility and each of their local markets; these were used to move commercial audio content in addition to accounting and sales information, among other things.

Late in 2010, Hunt started testing IP multicast with the Comrex Access on the Entravision MPLS network; by the middle of 2011, he began operating the MPLS distribution in parallel with the satellite network. By the end of last year, the new system had proven itself; Entravision was able to terminate their satellite contract then, saving the company several hundred thousand dollars in yearly operating expense.

Comrex Access (rack mount) units are used to originate the multicast streams from Los Angeles. This is a 1RU, full-duplex codec with a single Ethernet port (used for both streaming and management). In addition, with the appropriate physical-layer interfaces, it will work over 802.11b, g or n Wi-Fi, and 3G or 4G cellular networks such as EVDO, UMTS, WiMax and LTE.



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Broadcasting the All-Stars

ESPN Radio gives us behind-the-scenes access to one of baseball's biggest events

by Chriss Scherer, editor

At the midpoint of the baseball season, the top players come together for a short break from the usual contest of playing for championship honors to play baseball's annual All-Star Game. Leading up to the game are several events, including the Home Run Derby the day before the game. Covering a baseball game from a listener's point of view sounds like a simple task with three or four announcers, but it's rather involved and requires considerable planning. ESPN Radio allowed *Radio* magazine to tag along for a day to observe how everything comes together.

My first call was to Kevin Plumb, CPBE, VP, audio technology at ESPN, whom I have known for several years. He put me in touch with Kevin Ingles, technical producer, event production, who gave me an

initial rundown of everything that is covered by ESPN Radio during the Home Run Derby and All-Star Game. After working with Ingles, I was put in touch with Executive Producer John Martin to coordinate a visit to Kauffman Stadium to observe the broadcast team in action.

During the Home Run Derby, I shadowed Game Producer Ivan Sokalsky, Game Technician Al Rosenberg and Studio Technician Bob White. White puts all the equipment together for the broadcast, and has done so for several years. He built most of the IFB equipment used for the broadcast to facilitate communication between Sokalsky and the rest of the broadcast team. Rosenberg handles the final mix of all the game elements that are sent to the ESPN headquarters in Bristol, CT, to be uplinked.

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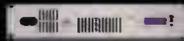
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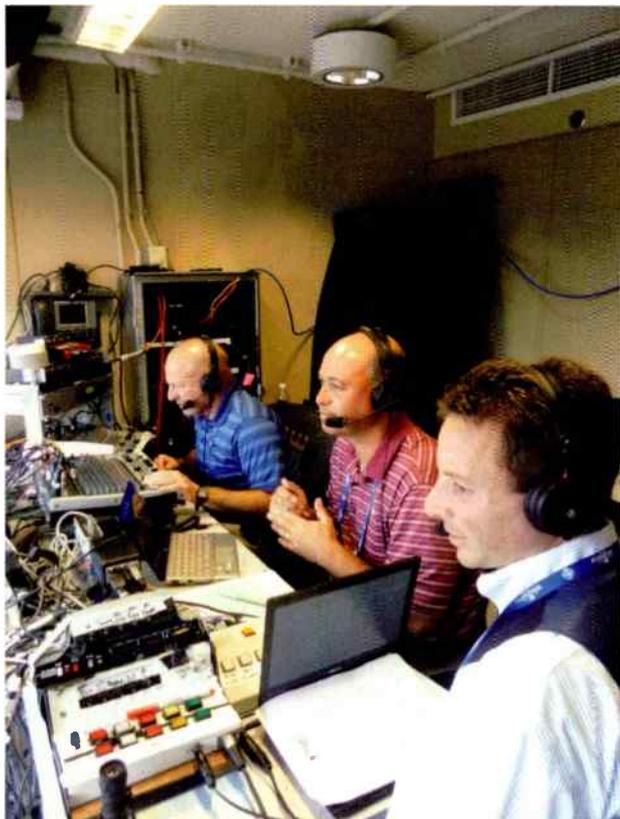


IP Codecs



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ONLOCATION



Above: Chris Singelton (in light green) and Peter Pascarelli (plaid) on the field with Mike Soucy (stripes) just before the start of the Home Run Derby. Left: Sokalsky, Kestecher and Rosenberg in the broadcast booth.

INITIAL PREP

About a month before the game, Ingles and Martin visited Kauffman Stadium, the home of the Kansas City Royals and site of the 2012 All-Star Game, to conduct a site survey. By meeting with representatives from Major League Baseball, ESPN was given the specifics of the game schedule. By meeting with representatives from the stadium, ESPN determined what was available on-site and see the physical space that would be used for the broadcast. ESPN used the home radio booth at the stadium. This booth is about three stories above the field level and almost directly behind home plate.

There are two levels in the booth itself. The announcers sit on the lower and more forward portion, while Rosenberg and Studio Host Marc Kestecher sit on the upper. Sokalsky stands

and is able to move between the two levels as needed, although his IFB control box and computer are on the end of the second level table top. White used a counter top in the back for equipment staging and last-minute repairs or modifications as needed.

There's a list of the broadcast personnel on page 29, but to help clarify each person's role, here's a rundown.

Coordinating producer: In Connecticut during the game, he works with the studio producer in Kansas City for ins and outs, scheduling interviews and other broadcast elements.

Game producer: In the broadcast booth in Kansas City, he keeps the talent on the format to keep segments on time and meet the ins and outs. He provides the talent with info to announce the game and notes any needed promotions. He also acts as a spotter to track stats, watches who is warming up and gathers research notes. He also watches the clock to join the game in and out of breaks by monitoring the TV cue feed. He is the main point person of all communication during the broadcast.

Technical director: In Connecticut during the game, he is responsible to get it all on the air.

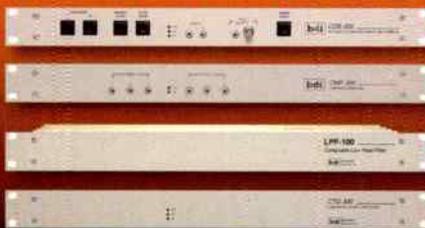
Game technician: In the Kansas City booth, he handles the primary mixing duties.

Studio technician: In Kansas City, he acts as the secondary audio engineer during the game. He moves between the booth and the field as needed.

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The Home Run Derby and All-Star Game are run in almost the same manner, except for the Derby there is more show preparation. A live game has ongoing play-by-play, but the Derby (at least on the radio) can get drawn out since it's a pitch and swing with possibly several unswung pitches in between. For the Derby, Jon Sciambi remains in the booth, while Chris Singleton and Peter Pascarelli are positioned at either team's dugouts. This allows them to talk to the players on the field during the Derby. For the game, Jon Sciambi joins the booth setup.

During the Derby, special guests are also brought in to the booth, including George Brett, who now works in the back office for the Kansas City Royals.

AUDIO FEEDS

It's already obvious there are lots of audio feeds during the game. Some feeds are included in the on-air mix, while others are strictly for cueing. The announcers and host account for up to four feeds. There are six wireless mics as well as two wired positions in the dugout. (The dugout

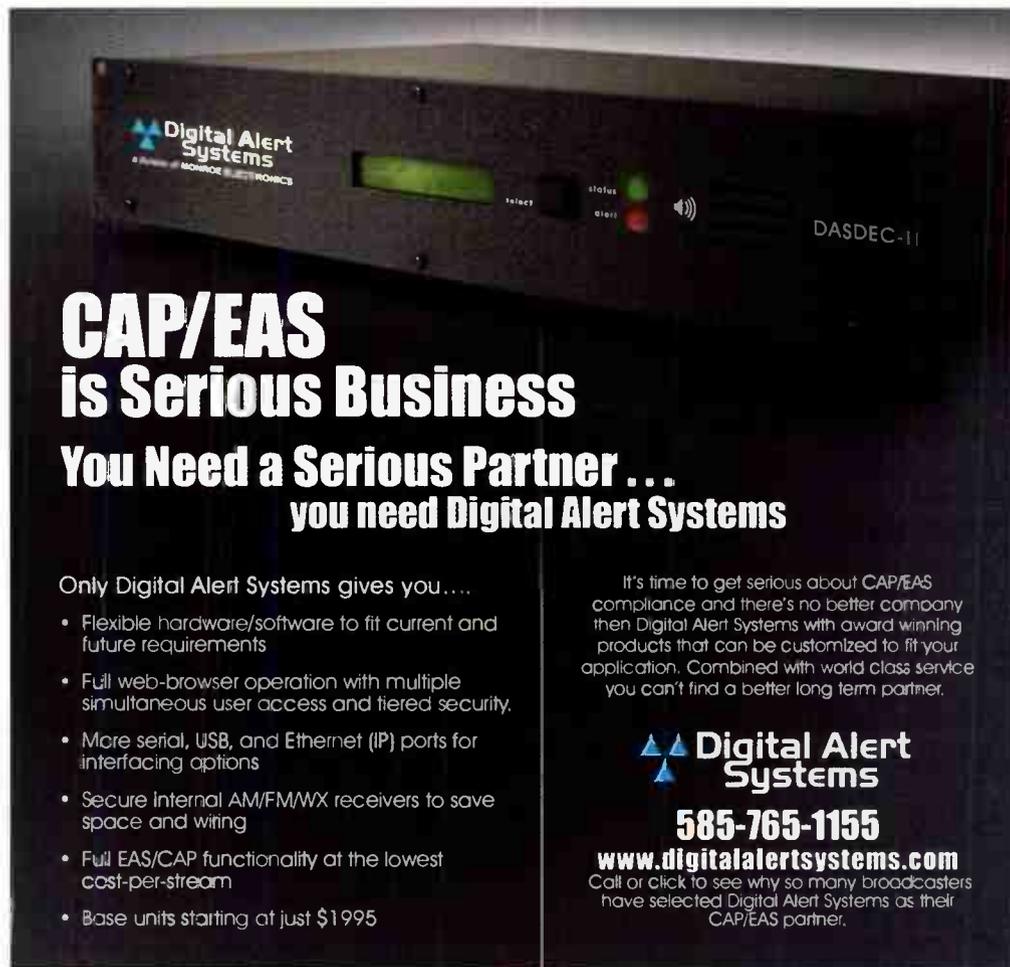
FREQUENCY COORDINATION

With the hometown and visiting media in addition to the wireless frequencies used by the stadium itself (including security and concessions) and the on-site parties after, the RF environment is packed during the entire event. CP Communications, which handles frequency coordination for many major events, approached Major League Baseball to provide frequency coordination services for the All-Star Game and events.

Chris Castro, CBTE, the Kansas City local SBE frequency coordinator, was hired by CP Communications for the four-day event, which enabled Castro to pull from his existing market data. Castro is also the NFL Game-Day Coordinator for the Kansas City Chiefs.

When Castro was asked to work on the All-Star Game about six weeks before the weekend, he first coordinated all the Kansas City media first to get them in his database. While some requests trickled in leading up to the game, Castro says the bulk of requests came in as other media came to Kansas City to set up for the actual game on Tuesday. There were lots of international broadcasters as well, many of whom were not aware of frequency coordination practices. As some of these broadcasters tried to use their equipment and received interference, they quickly learned the process.

Castro says several thousand frequencies were coordinated during the entire event.



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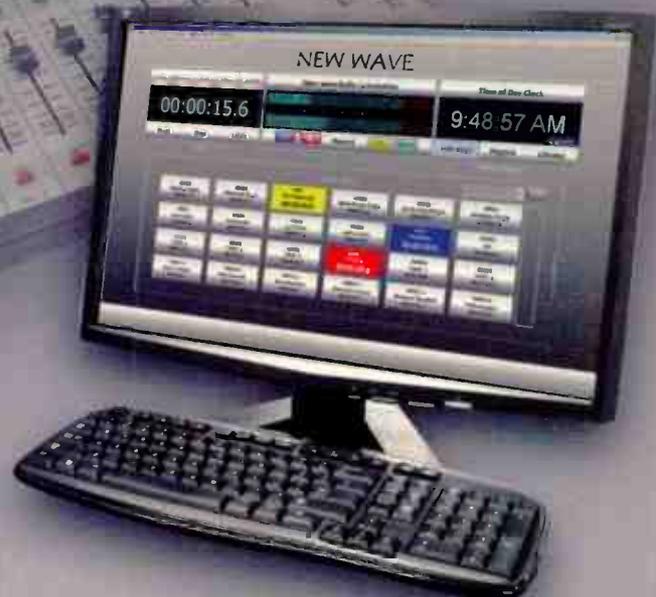
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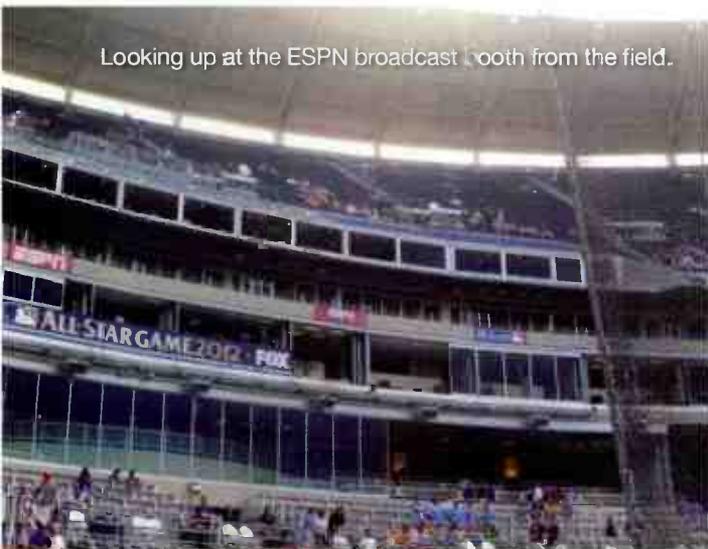
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World Radio History

ONLOCATION

Looking up at the ESPN broadcast booth from the field.



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has an audio output for interviews and other audio cuts.

The non-air audio sources include the game producer, TV assistant director (monitored only by the game producer for cueing of commercial breaks), the game technician and studio and field producers also have mics to contribute to the IFB. There is also a feed from the official game scorekeeper.

For ambience, the bat crack mics with a touch of the stereo pair crowd mics are usually enough to provide the needed ambience. Adding full crowd or feeds from the dugout mics gets too heavy for radio. With only an aural canvas to work, it gets too busy if there are too many audio

positions are wired to avoid RF interference, but the wireless is available as a backup or if greater mobility is needed.) Rosenberg places a pair of shotgun mics outside the broadcast booth to pick up stereo stadium ambience. A stereo feed from the field captures the "crack of the bat" when the ball is hit. (these mics are usually placed at the camera wells on either side of home plate.) The house PA provides a feed. A stereo crowd mix is supplied by the TV station covering the game. The producer's computer

sources being used.

All these audio sources come together to feed two Behringer Xenyx X2222USB consoles. There are two compressors (a DBX and a Samson) providing 12 channels of compression, which is applied to the talent mics and some of the other audio feeds.

The game producer has the most complex monitor setup of all those involved. He can talk to everyone and everyone can talk to him. He routes

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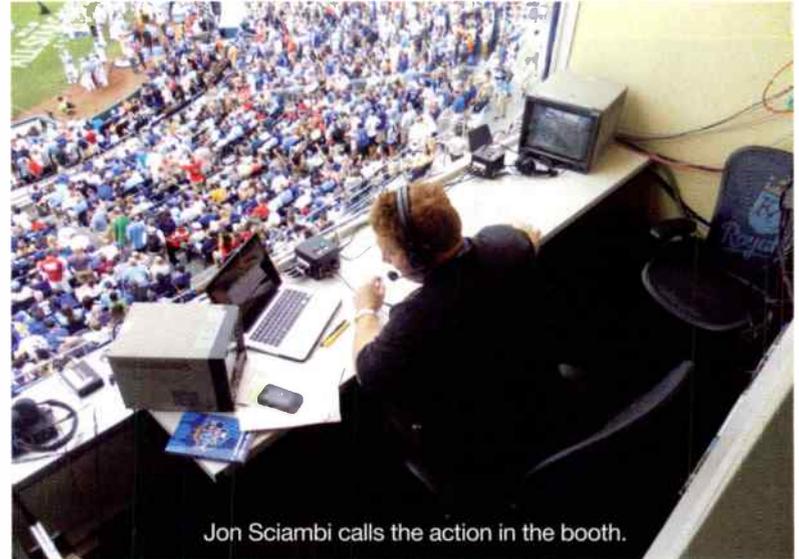
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information as needed. Through him, the multiple IFB channels are created. Five of these are distributed via wireless IFB transmitters. Using a routing box built by Bob White, Sokalsky can talk to anyone on a headset individually or in groups. This custom intercom box has RDL mixers for Sokalsky to set his own levels. The on-air talent also have custom control boxes to talk to Sokalsky off-line if needed. Sokalsky has a direct link to the Bristol, CT, headquarters via a dedicated POTS line through a JK Audio Autohybrid. Sokalsky monitors up to 12 audio sources during a game.

A Telos Zephyr Xstream connects via ISDN to the facility in Connecticut. A stereo mix from the game is sent to Connecticut, and two mono feeds are sent back. One return channel is a full mix of the entire broadcast audio program, which is fed to the speakers in the stadium concourse. The other return channel is a mono mix-minus feed. As a backup, a Comrex Hotline is connected to carry the program audio as well.

GAME PERSONNEL

John Martin – Executive Producer
 Ivan Sokalsky – Game Producer
 Mike Soucy – Field/Studio Producer
 Jon Sciambi – Play by Play Announcer
 Chris Singleton – Game Analyst
 Marc Kestecher – Studio Host
 Peter Pascarelli – Studio Analyst
 John Rooney – Studio Analyst
 Al Rosenberg – Game Technician
 Bob White – Studio Technician



Jon Sciambi calls the action in the booth.

The description of the setup sounds complex, and to see it all interconnected looks even more intimidating, but once it's all set in place, the broadcast takes off. The people involved know their jobs and how to use the equipment and technology to their advantage. The result is a clean and polished broadcast that entertains loyal baseball fans. **0**

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by Doug Irwin
CPBE DRB AMD

Layer 2 Switches ... in Detail

Every radio station has at least one Layer 2 (Ethernet) switch nowadays. They seem like the ideal device: You take one out of the box, connect a bunch of cables, and it magically starts working. You don't even have to configure it—or do you? Our topic this month (and next) is basically what you should know about Layer 2 switches.

I noticed fairly early on that these Layer 2 switches could become a single-point-of-failure, especially when it came to automation systems. Here we have all the connections between client workstations, and a server, going through this device. What if the power supply fails? Or, what happens if it just stops working, as magically as it started? The answer I always got was, “just keep one on the shelf—if the first one dies, plug this one in.” I'll admit, this has never happened to me; but if it did, could I just

grab any old switch, and throw it in place of the dead one? Without knowing how to peer in to the switch itself, the answer is a big fat *maybe*. Let's look at a few items so we can be sure this on-the-shelf switch is indeed ready to go.

If you take a switch out of the box for the first time, just plug it in, and start connecting its ports to various hosts (in this case either workstations or other devices that just happen to communicate via Ethernet) it will start working as you expect. It will have a default configuration, and the MAC address table will be empty. As it starts receiving frames on its various inputs, it adds entries to that table; before you know it, the switch has identified all the connections (in terms of the MAC addresses of the connected devices) and it allows them all to communicate with one another.

But maybe you don't have the luxury of having a new switch, sitting in box, never before used. Maybe you have to grab one from somewhere else. You slap it in the rack, make the connections—and voila. Some of the ports seem to work—and some don't. Now what do you do?

To be prepared for this scenario, you need to know a few things about any switch you grab from some other duty. These things also apply to switches you buy second-hand. (Used Layer 2 managed switches are a dime-a-dozen on eBay after all.) These things are:

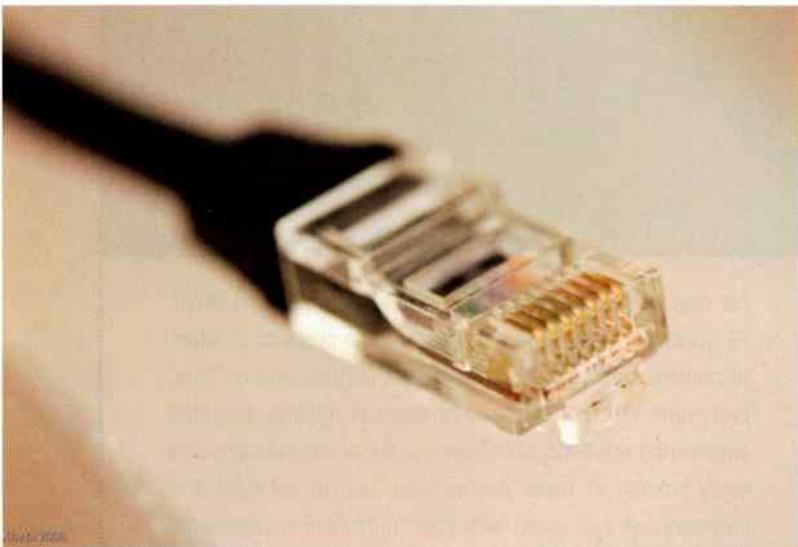
- Are the ports configured for access, or as trunks?
- Are the ports configured as full or half-duplex, and at what speed (generally 10 or 100Mb/s)?
- Is there more than one VLAN configured in this switch, and if so, which ports are assigned to which VLANs?

These configurations are remembered by the switch in its non-volatile memory; so a switch that's sitting around may have a configuration that was used years ago, but has no relevance whatsoever in the present. Those configs can keep it from working as you would expect though.

It's beyond the scope of this article to describe a procedure by which you make these changes in the configuration of a switch. If you already know how, great; if not, get help from your IT colleagues. Keeping a Layer 2 switch on the shelf and ready is certainly good engineering practice. 📞



Cisco 3560 switch



WE NEED YOUR TIPS

Tech tips may be suitable to earn SBE recertification credits. Send your tips to radio@RadioMagOnline.com.

Irwin is transmission systems supervisor for Clear Channel NYC and chief engineer of WKTU, New York. Contact him at doug@dougirwin.net.

MEET THE NEW AXIA xNODES!

IP-AUDIO JUST GOT AN UPGRADE.

Everybody knows that Axia introduced broadcasters to IP-Audio in 2003. 3,000 studios and 30,000 connected devices later, the competitors who said "it'll never work" are now eating their words. How do you follow up that sort of success? If you're us, you open up a case of Monster and go back to work. So we did.

The result: Axia xNodes, smart new AoIP interfaces that transform your audio devices into an intelligent network. Use them to turn analog, digital or mic-level signals into routable IP-Audio, with associated GPIO logic. They're so advanced, they won two major awards at their NAB debut.

WHAT CAN YOU DO WITH THEM? HERE ARE A FEW IDEAS.

- » **BUILD A ROUTING SWITCHER.** One stand-alone xNode is an 8x8 (4x4 stereo) routing switcher. Connect 8 xNodes to a switch and make a 64x64 routing switcher. Need more I/O? Connect more xNodes. Like all Ethernet-based networks, Axia systems are naturally scalable, up to 10,000 stereo signals (plus logic).
- » **STL OVER IP.** Today's cluttered RF spectrum makes IP a great alternative. Put an xNode at either end of a fiber run, OC-3 circuit or a pair of inexpensive Ethernet radios to send eight channels of uncompressed audio to your TX – and get eight channels of audio backhaul too.
- » **SAY SO LONG TO SOUND CARDS.** PCI, PCIe, USB3, FireWire... who needs 'em? Load the Axia IP-Audio Driver onto your PC workstation and connect it to an xNode to get eight professional, balanced outputs and eight inputs. Use an industry-standard DB-25 breakout cable for pro XLR connections. You'll get studio-quality audio and save some green, too.
- » **ADD MICS TO THE MIX.** xNodes make awesome multiple Mic preamps. They have ultra-low-noise, ultra-high-headroom, studio-grade preamps with selectable Phantom power. Put your Mics in, bring your analog line level out. And that IP-Audio network Jack? Ready to be used whenever you upgrade to a full IP-Audio network.
- » **MAKE AN A/D/A.** Take one analog and one AES/EBU xNode and rack-mount them side by side. Voila! Eight precision A/D converters and eight precision D/A converters, in just 1RU. Studio-grade, 48 kHz, 24-bit Delta-Sigma A/D and D/A converters, with 256x oversampling, make difference you can hear.
- » **SLIM DOWN YOUR SNAKE.** Connect two analog or AES xNodes with a single Ethernet cable for an instant 8x8 bi-directional snake and bid the multi-pair bundle goodbye. Add a few more xNodes on each end for a 16x16, 32x32 or 64x64 snake. Use off-the-shelf media converters for long-haul fiber connections.



xNODES ARE SMALL. Mount them on your wall, under the counter — mount 'em on the ceiling if you like. Optional rack- and wall-mount kits provide plenty of options.

CONFIDENCE METERS on every xNode mean you'll never have to wonder where the audio's at. Audio presence and levels are both displayed at a glance.

INFORMATION OVERLOAD? Not here. Sharp, high-res OLED displays put all the information you need right on the front panel, without the need for a distracting multi-colored lightshow.

xNODES WORK WITH BOTH LIVEWIRE AND RAVENNA AoIP networks — making them compatible with IP-Audio gear from over 40 major broadcast companies.



NO NOISY FANS HERE. Front-mounted heat sink keeps xNodes calm, cool and collected using air-conditioned studio air (instead of that hot air in the back of the rack).

NOT AT THE OFFICE? No problem; built-in webserver lets you manage an xNode from anywhere. Or, use Axia iProbe software to manage your entire facility — back-up and restore settings, automatically update software and more.

RJ45 OR DB-25? xNodes give you I/O both ways, so you can choose whichever industry-standard breakout cable you prefer.



FAST, ONE-BUTTON SETUP. Hit the switch and plug 'em in — your xNodes will be streaming audio in under 30 seconds.

DUAL ETHERNET PORTS for redundant network links. The overnight jock kicks out a connection? No problem; the other one takes over so your programming never skips a beat.

xNODES HAVE AUTORANGING INTERNAL POWER SUPPLIES, but can use PoE (Power over Ethernet) too. Perfect for those out-of-the-way places where a power cable is inconvenient. Hook 'em both up for redundant, auto-switching backup power.

VERY VERSATILE. 5 different xNodes handle nearly any signal type. AES/EBU, Analog, Microphone and GPIO xNodes are perfect when you've got a lot of one audio type to work with. But what if you need a little of everything? This is the Mixed Signal xNode. Think of it as your utility MVP, with a switchable Mic/line input, 2 dedicated analog ins, 3 analog outs, a digital AES/EBU input and output, and 2 GPIO logic ports.

MONO OR STEREO ROUTING. Choose from 8-in, 8-out mono operation or 4-in, 4-out stereo. Both signals intermix seamlessly on your Axia network.

TWO xNODES MOUNT SIDE-BY-SIDE, so you can create your own custom mix of I/O types within a single rack space. Pair up an AES/EBU xNode with a microphone xNode, or match a GPIO xNode with an analog unit. Or combine a couple of Mixed Signal xNodes for the ultimate mix of mic, analog, AES3, Analog and logic I/O.



AxiaAudio.com/xNodes



Available in the U.S. from BGS: (352) 622-7700

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RDL HR-MCP2

by Chris Wygal, CBRE

Radio engineers are sometimes regarded as control freaks. And for good reason: An engineer spends each day critically listening to and adjusting the audio chain in his or her facility. The aural characteristics of a studio are somewhat of a signature for the engineer. He or she will generally take ownership of the technology and the sound that is crafted. The continual mulling-over of audio is the sure sign of a dedicated engineer and the negative “control freak” connotation contains a slight pat on the back.

For control freaks, Radio Design Labs (RDL) has introduced the HR-MCP2 dual-channel microphone compressor. The unit takes up half a single rack space, and the dynamic control packed inside it is an overly picky engineer’s dream come true.

MAKING THE CONNECTIONS

The HR-MCP2 is designed to be portable or permanently installed. A standard

plug-in jack and a Phoenix-style terminal block facilitates the 24Vdc power input from the wall-wart power supply. The unit draws 200mA during normal use or 230mA when phantom power is used. Both microphone inputs have XLR inputs and outputs as well as terminal block inputs and outputs. Output levels are set to either line or mic using rear panel recessed switches on both channels. The mic-level outputs allow for the compressor to be set up in-line between the microphones and mixing console inputs. When line-level output is used, the unit can be output to a line-level console input or channel insertion point.

AS SIMPLE AS 1-2-3

Both channel adjustments, except for line/mic output selection, are made via the front panel. Each channel has a 6dB/octave low cut filter with a 3dB cutoff at 80Hz. “Gain” facilitates 20dB to 60dB of microphone gain adjustment along with a 15dB input pad that compensates for high-output condenser mics. Each channel has a single red LED clip indicator and a seven-segment LED meter

that displays gain reduction in 3dB increments. The phantom power on/off button provides 48V for both channels. The power button is ganged with a bright blue LED that is illuminated when the unit is powered on.

Proper operation of the HR-MCP2 requires minimal, but important level setup. By way of a brief example, I used a standard large-diaphragm condenser microphone and put the compressor in-line between the microphone and a mic input on a production mixing console. With low-cut filter and input pad on, I raised the gain until my normal speaking voice produced 9dB of gain reduction. The red LED clip indicator will flash slightly prior to any audible clipping. For best performance, the clip LED should never flash. The results of this particular setup are discussed in the next section.

PERFORMANCE

The HR-MCP2 is economical when space is limited. Optional rubber feet make it perfect for desktop use. From a performance perspective, the unit intelligently and

RDL

800-281-2683
rdlnet.com

transparently controls transient dynamic levels. Put simply, if a voice talent staffer has the tendency to mumble and yell in the same sentence, or if they practice poor microphone proximity technique, the HR-MCP2 goes to work.

Processing is done at the microphone level and the preamps are deathly quiet. They additionally provide tons of headroom. With those three combinations, the unit is practically invisible in the signal chain, even when abnormally high gain control is used. Additionally, when the compressor is working, no audible signal degradation is present. Many compressors tend to muddy the signal when the compression threshold is aggressively driven.

The HR-MCP2 however, handles transients and overshoots unlike most compressors I've used. As mentioned before, a comfortable speaking level registered a 6dB or 9dB gain reduction level. At this level,

there was a comfortable amount of compression, making the voice a little punchier and brighter. The real test was when I practically screamed into the microphone. The VU needles on the console and waveform on the recording software never peaked! Plus, there was no audible distortion. I could talk normally, whisper and yell with no dynamic disparity. The HR-MCP2 provides 25dB of gain reduction. The only time I heard the compressor working was when I purposely turned the gain all the way up. Basically, if the clip indicator lights up, the entire system is overdriven and the compressor will go into overdrive. However, if the preamp isn't overdriven, the attack and release is simply not audible.

The seventh yellow reduction LED shows 21dB of reduction. The red clip indicator comes on at 24dB. After 25dB, the compressor will not create distortion, it just won't compress any further.

APPLICATION

The HR-MCP2 can be installed anywhere high-quality transparent microphone compression is needed. In a broadcast setting, the unit provides excellent dynamic control and works well as a standalone compressor for on-air and production studios. It can prevent overdriving downstream inputs, equalizers or other dynamic processing. The unit is invaluable if on-air talent is hard to control. From normal chatter to all-out belly laughter, the HR-MCP2 can keep it all in check. In addition, given the two-channel nature, the unit is perfect for a matched pair stereo microphone technique needing dynamic control. The possibilities are endless for a two-channel microphone preamp and compressor that behaves as transparently and seamlessly as the HR-MCP2. 

Wygala is the programmer and engineer for Victory FM at Liberty University, Lynchburg, VA.

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Adobe Audition CS6

by Chris Wygal, CBRE

When we encounter things in life we find reliable, they are generally built on a long-standing foundation. Conversely, fresh-off-the-drawing-board products rarely produce perfect results right away. Years and years of agonizing over details and performance are what create excellence. Gathering end-user data containing compliments and complaints alike is what developers use as they better their product line. This is the case with one of the most recognized household names in radio broadcast production: Adobe Audition.

Many of us remember Cool Edit from Syntrillium. It was born in the mid-1990s and was a forerunner in professional Windows-based audio editing software. Some years later it became Adobe Audition. Since then Adobe has delivered five renditions of Audition, and each has outperformed its predecessor markedly. Just more than a year ago, Audition 5.5 hit the market as part of the Adobe Master Collection. This unveiling introduced Audition to Macintosh users, turning the world of audio-editing-via-Mac on its head. However, some veteran Audition users may have discovered some unsettling operational features inside version 5.5. But fortunately, at the 2012 NAB Show, Adobe Master Collection 6 was unleashed, and with it a reworked, reinvented and recharged Audition CS6.

THE HORSEPOWER

Not necessarily new to the CS6 release, but more fine-tuned is Audition's multicore/multiprocessor optimization. This has effectively modernized Audition in that heavy processes and workloads are distributed simultaneously across as many CPU processors as are available on the computer. Tasks can be completed efficiently in parallel instead of sequentially. For example, a mastering effect can be batch processed in the

background while the user continues to edit in another session (multiple sessions can

be opened at once). Multicore processing also makes real-time effect rendering much smoother. Suppose an effect rack on a particular track is stuffed with reverb, compression, EQ and delay effects. Audition has the know-how to divide the workload, making editing smoother and less likely to freeze.

The inclusion of Audition in Adobe's Master Collection is an effort on the part of Adobe developers to streamline workloads. Audio editing can be exciting and challenging, but many times it involves repeated keystrokes and processes day-in, and day-out. With that in mind, there is a long list of improvements found in Audition CS6 that are welcomed. The first item I was excited about was the ability to once again trim and delete audio (in waveform mode) while the file is playing. When a deadline is looming, the ability to simultaneously listen to and cut on a file is a must.

Another timesaver is the Media Browser window. Dockable anywhere in the workspace, the media browser displays all file folders and drives. When the folder is expanded all audio files therein can be clicked and previewed. If auto play is selected, the file plays when simply clicked. When the file is double-clicked, it opens in the waveform editor. In the multitrack editor, the audio file can be dragged into a session track from the media browser. Media browser is an improvement on the old task of selecting File-Open and navigating to the file for preview. CS6 puts all available audio files on the workspace, and a click away.

A close relative to the media browser is the Files panel, where files are not only auditioned, but file information is displayed. Information including length, sample rate, channel (stereo or



Intuitive workspace

Multicore/multiprocessor optimization

Media Browser for audio assets

Background batch processing

AES46-2002 Cartchunk metadata integrated

mono), bit depth and format, just to name a few, are listed. The file panel also features a search toolbar that lets the user quickly locate a currently opened file. This is especially handy when a multitrack session is open that contains extensive amounts of individual audio files. It features five clipboards, meaning several snippets can be cut, copied and pasted from different clipboards without overwriting.

THERE'S MORE FROM WHENCE THAT CAME

Sometimes we never know where our audio production will land. While taking advantage of the stereo image is fun, taking mono radios into account is wise. Each multitrack channel and output bus in Audition CS6 can sum to mono. This feature is critically important in that it mono sums properly without introducing additional phase concerns. More importantly, it allows the user to preview his or her production in mono, which can reveal phase problems especially when audacious spatial effects are used (or misused).

Most NLE (non-linear editing) engineers have found themselves waist-deep in massive multitrack sessions with grouped clips. Selecting the clips is arduous, but more arduous is selecting one of the clips from the group for individual editing or repositioning. CS6 allows the user to suspend the focus clip of a group, without breaking the grouping. If an individual clip needs adjusting forward or backward in the session, it can be selected by itself and modified. Then, it can easily be regrouped.

ADOBE SYSTEMS

800-833-6687

adobe.com

Every imaginable pitch, EQ, reverb and dynamic effect is a part of the software's ease of use. Some effects, however, stand out as exceptional. Automatic and manual pitch correction very accurately allow the user to pinpoint pitch problems and correct via envelope control. In the case of music production, a vocalist's pitch may have been inconsistent while holding a note. Simply transposing the entire note slightly by a few cents won't correct the problem, but gradually adjusting the pitch over the length of the note will. Manual pitch correction allows for that, which can be handy as an effect for whacky pitch changes on a radio spot. In addition to powerful pitch correction, the tone generator has returned with CS6. Whether calibrating equipment or creating drones, tone generation is a valuable tool. The notch filter is back as well, allowing pinpoint handling of problem frequencies.

Any broadcaster will bear witness to the fact that metadata is critical to audio production. Familiar terms like RIFF, BWF, ID3 and Cart

Chunk are all standard operating procedures. The metadata panel makes all (AES) meta-data information available and editable in the workspace while the file is open. Cart timer markers, as an example, allow users to easily set EOMs on audio files that automation systems recognize during regular payout.

PLAYS WELL WITH OTHERS

Audition CS6 is designed to interface with most popular DAW control surfaces, including EUCON (from Euphonix) and Mackie MCU. MME/WDM, ASIO and CoreAudio (for Mac) audio drivers are supported. Nearly all audio file formats are supported as well, except when exporting WMA. Additionally, given the increase in in-house video production on the parts of radio production staff, CS6 supports practically all popular video formats. Round trip editing allows for smooth integration with video production workflows when using Adobe Premiere Pro. For CD production, the CD

editor panel allows for quickly dragging and dropping files into the CD track layout from the media browser. The CD editor enforces Philips Red Book Standards on the disc, making it consistent with industry standards.

Have we even so much as scratched the surface of Audition CS6 in this brief review? Of course not. This release of Audition is crammed with unending features, each designed with specific roles and needs in mind. Every producer will find more than enough tools to complete complex or daily familiar tasks. CS6 is a welcomed breath of fresh air for Adobe customers, and it will be a brilliant introduction to professional NLE software for new users. With advancements in workflow and processing power built-in, and intuitive usability, the Adobe Audition name lives on as a standard in radio broadcast production. 

Wygol is the programmer and engineer for Victory FM at Liberty University, Lynchburg, VA.

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Portable PAs

When the show goes outside the studio, there's almost always a need for some kind of sound reinforcement, even if it's just for the off-air (or mock off-air) signal. A boom box is common, but has limitations and rarely fills the space. There's also an advantage to being able to talk directly to the crowd.

We looked at several systems, keeping portability in mind. These five systems are all compact enough to be hauled and set up by one person. Two of them offer battery-power options, which could be useful in some situations. One important accessory would be stands to elevate the speakers.

In all cases, we looked for units with at least one mic input and one line input. Adding a small tuner or a backhaul feed from a codec can provide the on-air feed. And with two line inputs, the studio mix-minus backhaul can be mixed with the local audio feed. An iPod dock might be handy for some. **0**



| Model | Alesis Transactive Mobile | Fender Passport 150 Pro | Roland BA-330 | Samson Expedition XP308i | Yamaha Stagepas 300 |
|---------------------|--|--|--|--|---|
| Style | all-in-one | speakers and amp | all-in-one | speakers and amp | speakers and amp |
| Mono/Stereo | mono | stereo | stereo | stereo | stereo |
| Inputs | 1x XLR/TRS mic, 1x TS instrument/line, 1x RCA stereo | 2x mic XLR or line TS, 2x line 1/4" TS or 3.5mm TRS | 2x mic XLR or TRS instrument, 2x TS stereo line, TRS link, RCA aux | 4x XLR or TRS mic/line, stereo TS/RCA, stereo RCA | 4x XLR or TRS mic/line, stereo TS/RCA, stereo RCA |
| Outputs | 1/4" TRS line | 3.5mm TRS line | stereo TS link, stereo TS line | stereo TRS line, RCA | stereo TS line, RCA |
| EQ, Effects | none | tone on channel, master tone, reverb | tone on channel, bass & treble on master, antifeedback, reverb | 2-band EQ on channel, speech/music master, reverb | 2-band EQ on channel, speech/music master, reverb |
| Frequency Range | 63Hz - 80kHz | 20Hz - 40kHz | not provided | 20Hz - 20kHz | 20Hz - 20kHz |
| Output Power | 16W | 2x 150W | 2x 15W | 2x 150W | 2x 150W |
| Speaker Spec | 8" woofer, tweeter | 5.25" woofer, 2.75" tweeter | 4x 6.25" woofer, 2x tweeter | 2x 8" woofer, 2x 1" tweeter | 2x 8" woofer, 2x 1" tweeter |
| Special Inputs | iPod dock | - | - | iPod dock | - |
| Features | built-in wheels and extending handle, battery indicator, iPod charger, internal speaker pole mount | joins as single unit for transport, internal speaker mount, storage bin in amp | tilt-back stand, pole-mount adapter, battery indicator | joins as single unit for transport, internal speaker mount, storage bin in speaker, amp can be removed | amp can be removed from speaker, storage bin in speaker |
| AC Power | 100 - 120Vac, 220 - 240Vac | 100 - 120Vac, 220 - 240Vac | 12-16V/4A from ac adapter | 100 - 240Vac | 100 - 120Vac |
| Battery Power | internal lead-acid | none | 8x AA batteries | none | none |
| Battery Life | 12 hours | - | alkaline: 8 hours Ni-MH: 10 hours | - | - |
| Dimensions (inches) | 15 x 18.5 x 11 | 19 x 25 x 11 | 16.375 x 14 x 20 | 19.1 x 20.1 x 10.6 | 10.875 x 18 x 10 |
| Weight (lbs) | 33.8 | 30 | 30.5 | 37.4 | 39.7 |
| MSRP | \$599 | \$560 | \$899 | \$680 | \$789 |
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NEWPRODUCTS



Portable codec | AETA Audio Systems

Scoopy+ with LTE: Scoopy+ supports HD Voice (7kHz), and now the addition of LTE provides a significant performance improvement and an important alternative to congested 3G networks. With support for LTE, it achieves up to 100Mb/s for download and 50Mb/s for upload, with lower latency for better performance during live transmissions, and better coverage in rural areas by using lower frequencies in the 800MHz band. Scoopy+ also now includes IPv6 support for further ease of use. For optimum LTE performance, the codec can be specified with an internal module, or as an alternative, external USB LTE sticks can be fitted to existing Scoopy+ units.
aeta-audio.com

Acoustic panel | Auralex Acoustics

SonoLite Bass Trap: SonoLite Bass Trap is a 3" thick, 2'x2' fabric-wrapped StudiofoamPro core absorption panel. The traps are reverse-beveled for corner mounting. The panel is plastic-backed for improved rigidity and durability. SonoLite Bass Traps are packaged with six EZ-Stick SonoLite Mounting Tabs for easy, removable installation. Traps are available in both black and tan finish.
auralex.com

Digital hybrid for mobile phone | GlenSound Electronics

GS-MPITBU: The GS-MPITBU is a 1RU device featuring a digital POTS hybrid alongside a GS-MPI005 Broadcasters' Mobile Phone. There is a single input and output on the rear panel that is switched via a front panel toggle switch to be using either the phone or the hybrid. The GS-MPI005 part of the system is a quad band 2G GSM phone enabling broadcasting specification interfacing to the mobile phone network. The audio is RF shielded so is unaffected by the RF of the antenna. There are also controls for input and output level. The digital hybrid part of the system offers up to -76dB separation with on hook/off hook and input/output level controls.
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JUNE ISSUE

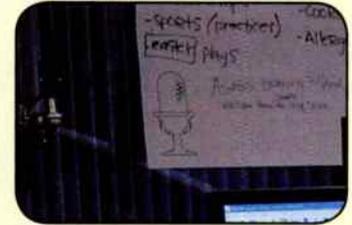
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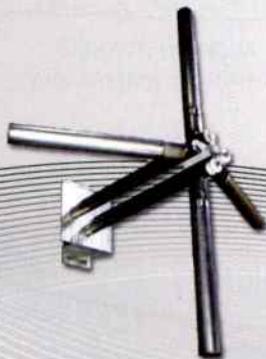
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The mic icon was on the white board behind the console.



The winner is drawn from the correct entries for the issue two months prior. No purchase necessary. For complete rules, go to RadioMagOnline.com.

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"A fast paced station needs a system that can keep up and is easy to use. Op-X gives us the tools we need to deliver the sound Houstonians have come to expect from KRBE."

Leslie Whittle, PD
KRBE, Houston, TX



Ask us about
our iPad
app!

- Modular Operation in Op-X allows for a tiered system at a fraction of the cost of its competitors.
- Each studio client is capable of accessing all Audio Server modules on the network.
- Remote voice-tracking allows for creation of content for remote studios also running Op-X.
- The revolutionary design of Op-X's clock builder turns the previous task of scheduling satellite programming into a few simple clicks.
- Share serial devices from any machine using the Op-X Serial Server.
- Importing logs now gets its own module that takes confusion out of the process.
- Engineers will enjoy Op-X because it's easy to install, maintain, and has automatic backup features.

iPad app Features

- Live show real-time control from almost anywhere
- A powerful tool for remotes or voice tracking
- Take a show on the road
- Start, stop, copy and paste functions from the log
- Insert audio items into the log
- Initiate audio playback from hot buttons
- Run macro command from hot buttons
- Secure access to your system



RADIO AUTOMATION SOFTWARE



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NEWPRODUCTS

Multichannel streaming processor | Sound4

Sound4 x8 card: Sound4 x8 features eight independent channels and a powerful sound processor. Its streaming engine can deliver five different streams per channel (40 streams total). High quality level coding includes MP3, AAC, HE-AAS, and HE-AACv2. Predictive HQSound algorithm offers sound unification with all codec types. It is ready for all delivering standard (Darwin, Flash, Helix, Icecast, Shoutcast, Wonza, etc.) It also features advanced metadata management and is Livewire and Ravenna compatible.

sound4.biz



Transmitter isolator device | ERI-Electronics Research

Ganged FM Circulators: The Ganged Circulator is available to provide additional isolation for either analog or digital FM transmitters with power output levels up to 35kW. The system employs a constant impedance configuration, which provides an input match under all conditions. The system also provides broadband isolation from the output to input ports. The product is modular and can be moved and installed in component parts allowing for placement in crowded locations.

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8-channel processing Blade | Wheatstone

Aura8-IP: Providing eight stereo channels of Vorsis Ultra High Resolution Processing, Aura8-IP can operate as a standalone multi-channel processor with analog and digital I/O or as a Blade on the WheatNet-IP Intelligent Network for processing audio anywhere. Possible applications include processing for low latency talent headphones, remote feed conditioning, microphones, satellite uplink peak- and spectral-control, talk-show call-ins, codec pre-processing, IFB conditioning, web streams, sweetening incoming commercials and newsroom feeds, STL pre- and protection-processing, multiple HD feeds and more.

wheatstone.com



Transmitters | Nautel

NVLT: These transmitters marry the architecture of the NV Series with the features of the VS Series. The analog-only transmitters complement the digital capable NV Series. Operational capabilities include analog or AES digital input; PushRadio; Livewire IP Audio I/O; Shoutcast or IceCast streaming input; local content storage; USB audio backup; dynamic RDS, dual SCA and stereo coders; scheduler and playlists. An Orban Inside option with full Advanced User Interface (AUI) integration is also available. Control capabilities include full local or remote access via Nautel's Web based AUI with onboard audio spectrum analyzer, modulation monitor and more. The advanced remote capabilities of Nautel's AUI can help engineers save time, trips and money.

nautel.com



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NEWPRODUCTS

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BCC-1: The MXL BCC-1 takes a new spin on side-address broadcast microphones. This end-address, cardioid microphone was designed to handle demanding performance requirements found in voiceover work. The small-diaphragm condenser capsule captures vocals and dialog without any compromises. The BCC-1 includes an internal shock mount, a narrow polar pattern and a bass roll off switch. Frequency response is 20Hz - 20kHz. The mic can handle up to 148dB SPL.
mxlmics.com



UPGRADES AND UPDATES

Sound4 has released Voice V2. The free upgrade offers new features and improvements to provide more flexibility depending on microphones and voice type. (sound4.biz) ... Deva has updated the DB-44 Firmware. The update adds features, improves the unit's performance and corrects some minor bugs. (devabroadcast.com) ... Mayah has released firmware updates for the C11, Sporty, FM II and Centauri II. The update provides compliance with the EBU audio over IP standards. (mayah.com) ■



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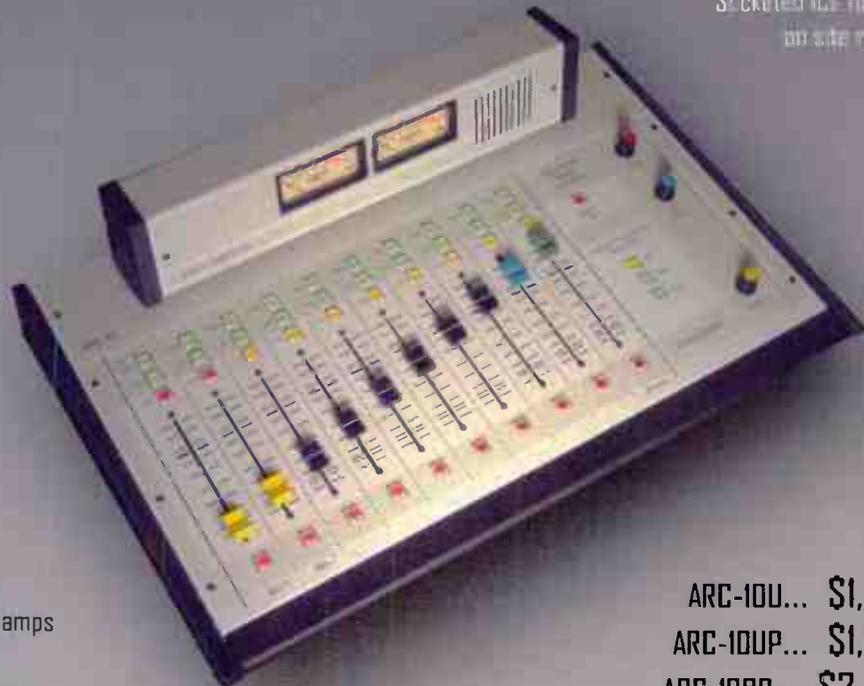
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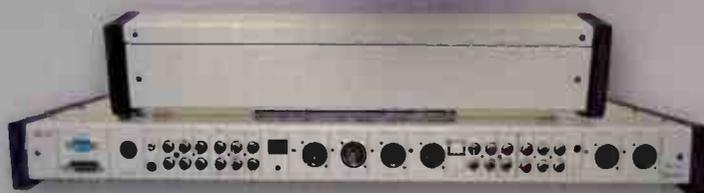
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Silence Sentinel - Audio Monitor w/Web

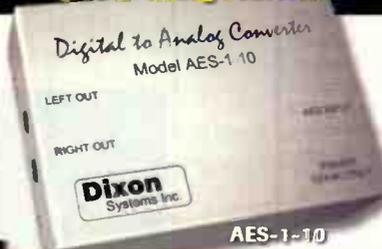
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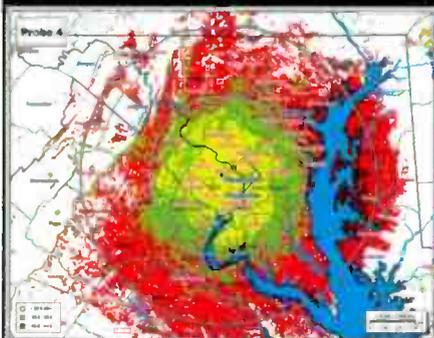
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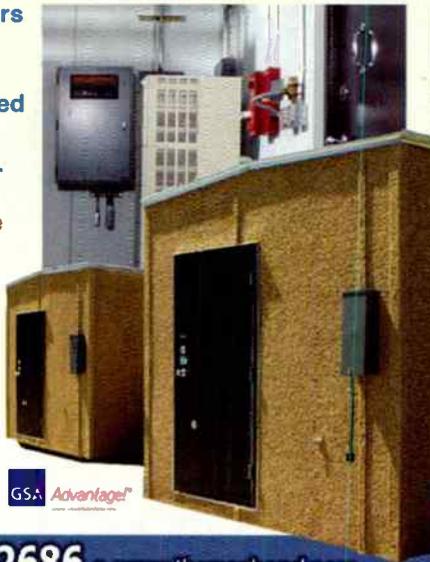
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by Erin Shipps, senior associate editor

Radio Personalities Still an Influence

A study conducted by the University of Southern California's Annenberg School for Communication & Journalism that examines the unique relationship between broadcast radio listeners and on-air personalities confirms that listeners feel they have a genuine relationship with their favorite radio personalities.

Among the key findings of the study, underwritten by Katz Radio Group, are highlighted. For more on the study, go to katz-media.com.

47 } Percent of study respondents who considered or purchased products recommended by their favorite radio personalities.

51 } Percent of study respondents who considered or purchased a product advertised during their favorite personality's show.

70 } Percent of study participants who reported that they follow their favorite radio personalities and/or radio stations via social media channels.

72 } Percent of respondents who talk to their friends about their favorite personality or what they heard on the program.

75 } Percent of study respondents who reported that they turn on the radio because they know their favorite personality is on the air.

82 } Percent of study respondents who expressed feelings and exhibited behaviors consistent with the phenomenon known as parasocial identification.

The Power of Sonic Branding

Katz Marketing Solutions recently commissioned a study to determine the impact of various national advertisers' sonic brands—in other words, how does what we hear affect how well we remember a company?

The interesting study found that audio, even just a few seconds of it, can trigger powerful brand messaging that impacts us cognitively, behaviorally and even physiologically. Twenty-four audio signatures were tested and 250 respondents were asked questions about each.

See the results at sonicbrandstudy.com and take our quiz below to see how well you know your sonic branding. Draw a line matching the slogan on the left with its company on the right. Answers are listed below.

- | | |
|---|--------------------|
| 1. Are you in good hands? | Mazda |
| 2. Pizza! Pizza! | Southwest Airlines |
| 3. Fifteen minutes could save you 15% or more on car insurance. | Home Depot |
| 4. Like a good neighbor... | Taco Bell |
| 5. M'm! M'm! Good! | Allstate |
| 6. You are now free to move about the country. | State Farm |
| 7. Zoom-Zoom | Campbell's |
| 8. More saving, more doing. | Capital One |
| 9. What's in your wallet? | Little Caesars |
| 10. Think outside the bun | Geico |

Answers: 1. Allstate, 2. Little Caesars, 3. Geico, 4. State Farm, 5. State Farm, 6. Campbell's, 7. Mazda, 8. The Home Depot, 9. Capital One, 10. Taco Bell.

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supports two phone hybrids
USB sound card modules
control room & studio

ARC-8
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both balanced & unbalanced I/O

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“gotta have it!”



“Wow, Wow!”

Rick Hunt, Vice President & Director of Radio Engineering, Entravision Communications Corporation

“Considering the LX-24’s attractive good looks, modularity, traditional console layout and functionality, I can’t wait to get my hands on one!”

Greg Landgraf, Senior Engineering Manager, Corus Radio Western Canada

“A high performance, reasonably priced, great looking console integrating common sense features such as overload indicators for meters and ergonomic controls. Very impressive and well thought out.”

Benjamin Brintzer, Regional VP Engineering Clear Channel Media & Entertainment

“By far the most elegant and feature rich control surface on the market. The attention to detail and functionality is remarkable. Its architecture, such as “hot swappable” modular design, is a winner. A traditional meter bridge is appreciated by users and your millwork guy will appreciate the fact that it’s a table-top design.”

Kris Rodts, Director of Engineering, IT & Facilities, CKUA Radio Network

“Wheatstone’s innovation continues to make AoIP a viable product for professional broadcasting facilities. Just a few things that make the LX-24 stand out to me are the clear and decisive metering, individual fader modules, and “out of the box” thinking with faders for the headphone and monitor volume controls instead of rotary knobs.”

Phillip Vaughan, Chief Engineer KFROG, CBS Radio



“Leave it to the exquisite design talents of Gary Snow and the Wheatstone team to really hit the nail on the head. The LX-24 is not only the most functional, feature-laden IP based console for radio, it also raises the bar for the finest ergonomic radio command center on the planet.”

Tim Schwieger, President / CEO, BSW - Broadcast Supply Worldwide

“I didn’t think Wheatstone could improve upon the E-Series of consoles. but they have done it with the new LX-24. This is a beautiful, well designed console and the individual faders, integrated meters with overload indicators and low profile table-top design make this a must have for our facilities.”

Michael Cooney, Vice President of Engineering & CTO, Beasley Broadcast Group, Inc.

“Cool and sexy (I sound like Bruno from Dancing with the Stars). A great addition to the WheatNet-IP family.”

Norman Philips, Vice President of Engineering, Townsquare Media

“I am very impressed with the sleek new design that incorporates single channel-strip architecture, integrated metering and stereo cue speakers in a thin, sloping chassis that needs no cabinetry cut out. Well done.”

Erik Kuhlmann, Senior Vice President of Engineering, Clear Channel Media + Entertainment

“Wheatstone continues to hit balls out of the park and this year they did so again with the LX-24 control surface. This new product marries the best of the old (modular design architecture) with the new (Audio-over-IP). Continuing in that theme was a Wheatstone module that marries their bridge router system to the new “BLADE” audio-over-IP system. This has the potential to extend the life of bridge router facilities indefinitely.”

W.C. Alexander, CPBE, AMD, DRB, Director of Engineering, Crawford Broadcasting Company

“The LX caught my attention on the NAB Show floor. The look, form and function are unlike any other IP console available today. The easy-to-read buttons and displays are just second to none, not to mention the most bang for the buck. I can’t wait ‘til I have the opportunity to deploy my first LX.”

Anthony A. Gervasi, Jr., Sr. Vice President Engineering & Technology, Nassau Broadcasting



See us at IBC 2012
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