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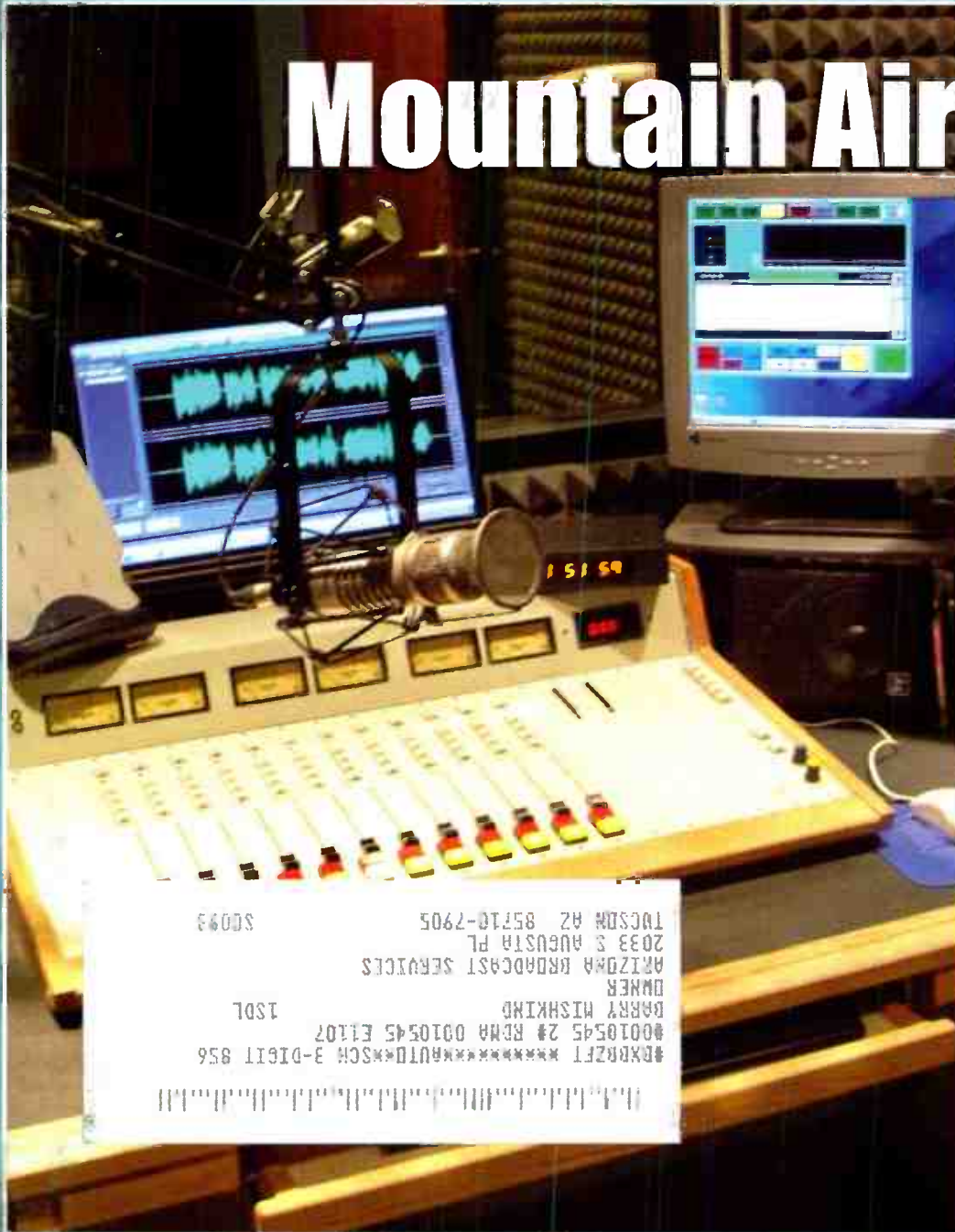


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September 2011
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ON THE COVER

Colorado's KUNC has been on the air for decades, evolving from 10W to a full Class C1 station. Check out how the station has settled into its new digs as it broadcasts on the mountain airwaves starting on page 22.



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Selected headlines from RadioMagOnline.com.

2012 Radio Show Heads to Dallas

The 2010 Radio Show was held in Washington. The 2005 NAB Radio Show was held in Dallas.

SBE Recognizes 2011 Ennes Award Recipients

Michael West, Jason David and Clint Mason have been selected by the Ennes Scholarship Committee to receive funding to further their education.

BE Appoints Wilson as Western Regional Sales Manager

Jeff Wilson has more than 15 years of broadcast equipment experience as BE's service manager for digital products.

Comrex Named Verizon LTE Innovation Center Partner

Comrex says the partnership has already produced results with new drivers for several Verizon LTE devices incorporated in the latest Access IP audio codec firmware.

Nautel to Provide HD Radio Training at 2011 Radio Show

Geared toward broadcasters considering HD Radio deployment, this training event will cover everything from basics to more advanced technologies.

Vorsis Study: Is the Loudness War Over?

An independent survey considers the role processing plays in a station's competitive edge.

Harris Appoints Richard Hinkle to Radio Transmission Team

Hinkle joins Harris from Gardner Denver. He previously worked at Broadcast Electronics and Glenayre Electronics.

WHUR-World Wins 2011 HD Radio Multicast Award

WHUR-World previously won the award in 2008.



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Industry Events

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Another Radio Show: What to expect

Summer is ending, and with that comes the fall convention cycle. There are times it seems all I do is prepare for the next conference or convention while simultaneously wrapping up the one that just finished. But in reality that's really only one part of what *Radio* magazine is about.

With this issue we prepare to head to Chicago for the 2011 Radio Show. It's been quite some time since I attended an event in Chicago, so I look forward to returning. Chicago should be a good location for attendees. Like Philadelphia, Washington and New Orleans, Chicago is a very walkable city around the convention hotel area. There are also plenty of things

to do outside the convention hours, and plenty of places to go during the convention. It's also easy to get around with the Loop, Chicago's light rail system.

So while the host city is a good choice, the real question is about the convention itself. The Radio Show has had its ups and downs over the past years. The glory days of the combined shows with the (then) RTNDA and SBE are behind us. The combined NAB/RAB show has provided some spark to the event again.

Comparing the 2010 show and the 2011 show, one big difference is the treatment of the exhibit area. Still called the Marketplace, the 2011 space has gone back to the traditional booth setup rather than the table-top layout like 2010. I welcome this change, or rather, return in approach to the layout.

The Marketplace will still have a session area within it, although it's off to the side. Looking at the floor plan, it should be close enough to attract attention when needed, but not so immersed in the exhibits that it's hard to do business on the exhibit floor. And the other session rooms are not too distant.

The sessions themselves have a good mix of topics. (We have a brief overview in this issue on page 52.) While we as engineers tend to stick to the technical track, I always look at the other conference tracks for potentially interesting topics. It's important for a station engineer to be involved in the management and programming sides to a certain degree, so it makes sense to look into their

sessions as well. Our session grid includes some of these non-engineering topics for your reference.

The fall Radio Show has struggled some in recent years. The economy itself is easy to blame, but there have been convention decisions that I'm sure looked good on paper, but did not execute well in reality. It appears the NAB and RAB and learned some lessons and put them to good use in planning the 2011 show.

Is the convention still heavy on the sales and management feel? Yes, but the RAB is a coproducer. That's the RAB's audience. The NAB's main involvement is with owners and managers as well, so I expect the tradition of the fall convention to appeal to this side of the station. Programmers have a good share of sessions, too. But the engineering track looks solid with all aspects of station operations being covered.

With a good central location, relevant session topics, a tested exhibit hall arrangement and an interesting host city, the 2011 Radio Show has the potential to be one of the better years for this convention.

Something new is coming

Next month you'll see a new look for *Radio* magazine, and we're excited to bring it to you. We're updating the look and feel of the issue with a slightly larger size and an updated graphic look. We started gathering ideas for the new look a few months ago, and those ideas have been put into the all-new look for *Radio* magazine. We think you're going to like what you see.

Chris Scherer

What's your opinion? Send it to radio@RadioMagOnline.com

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Disaster recovery

By Jeremy Ruck, PE

For United States residents, the odds of dying from a natural disaster have been calculated to be about one in 3,300. While the odds of a self-inflicted death are statistically some 28 times more likely, the broader scale on which natural disasters tend to occur makes it reasonable to assume that most broadcast facilities will at some time, or another, be affected by a natural or manmade disaster. The steps taken before disaster strikes will dictate how quickly recovery will occur. Because of radio's importance in disseminating information, the importance of maintaining a presence cannot be understated.

It is therefore prudent to create and maintain a plan for disaster recovery at your facilities, which includes maintaining a strong working relationship with your consulting engineer. As we have discussed before, every broadcast station is its own unique entity. A universal cookie-cutter approach, while a good first step, will probably not be an ideal solution in the end. As you build your plan, remember there are really three main areas of consideration.

First, it is necessary to know what potential hazards face the facility. Typically, threats can be divided into manmade and natural, or acts of God. While the initial impact of both categories to station operation may be similar, the long-term recovery may play out differently depending on the situational mechanics. Threats caused by people (anything from vandalism and equipment failure to riots and hazardous materials incidents) tend to have quicker recovery times. Threats in the natural spectrum (hurricanes, earthquakes, mudslides,

blizzards, conflagration, etc.) are more regional and can require a greater recovery time.

Minimizing harm

There is an old maxim out there that nothing is impossible, but some things cost more. This certainly is true in the instance of reducing the impact of disasters. While you could probably mitigate

away most of the potential hazards, quite frankly the lack of available resources will limit what ultimately can and should be done to prepare. For example, a multiple tower directional array could be constructed across town as an auxiliary site. The return on investment, however, would likely limit the attractiveness of such a solution for any organization other than the federal government, especially when an emergency wire antenna will result in core market coverage. Thus, operational continuity of 100 percent should never be expected, but you should strive for as close that as possible.

The last main portion of the plan involves repair, recovery and restored operations. Under this portion of the plan, general specifics for addressing a myriad of potential problems should be presented. Special attention should be paid to the language utilized, and explanations should include photographs or illustrations. When it comes down to cleaning up the mess after the disaster, the audience for this portion of the plan must be considered. First, there will no doubt be a high degree of anxiety as a result of whatever issue has transpired. Simple language and copious illustrations will help cut through the adrenaline fog that will likely be present. Secondly, as macabre as it sounds, the possibility exists that in a disaster affecting a wide area you may not be available to help in the recovery because of injury or death. At this point, the overnight guy who you would barely trust to change a light bulb may be called upon to restore the facility to some semblance of operation through your instructions.

All persons at the facility should know of the existence of the plan, and have some knowledge of what it contains. From time to time, the plan should be reviewed, and updated or changed as necessary. Any drills that are run, or tabletop exercises at meetings, will only serve to further cement knowledge in the minds of the staff. Copies of the plan should be maintained in multiple locations so the destruction of a particular building does not wipeout the only extant version.

Maximizing the availability of resources is always key to a quick recovery. Multiple facilities in a given market can be very helpful as you by default have alternate transmission and storage locations for parts and equipment that may become necessary for restoration of operation. The cost for the establishment of an emergency studio at the



Photo by Wayne R. Miller

Photo by Wayne R. Miller



coax, and a portable transmitter will allow operation from nearly anywhere you can find a support structure. On the AM side of things, keep wire to make an emergency antenna, coax and the components to fabricate a simple ATU in kit form. Quite frankly, the reduction in size of a number of crucial items has made it possible for an emergency radio station to fit in the bed of a pickup truck.

As the recovery and restoration proceeds, it is possible that some of the best thought out scenarios will become unworkable. Changes may need to be made on the fly. If there is a good

transmitter site is minimal. Similarly, an auxiliary transmitter can usually be established at the studio location for a small investment. Either combination will allow for station operation, even if at low power if issues strike at the normal main locations.

Maintaining an inventory of transmission parts for disasters is strongly recommended. For FM broadcasters, one or two bays of antenna, some

framework in place, however, the impact of these changes will still be less than having no plan in place, which in itself is a disaster.

Ruck is a senior engineer with D.L. Markley and Associates, Peoria, IL.



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Ownership report submissions pushed back

By Lee Petro


With fall rapidly approaching, it is time to begin thinking about the preparation of the Biennial Ownership Report (FCC Form 323) (the "Report"). In 2009, the Commission changed its long-time procedure of having commercial radio and television licensees file their Reports on the anniversary of the license renewal application filing date. This change was adopted as part of the Commission's Diversification of Media Ownership Proceeding, with the intention of establishing a common snap-shot date of the commercial media landscape.

Due to delays, first in adopting the Report, and then further delays while it obtained regulatory approval and resolved whether individuals were required to obtain Federal Registration Numbers for the sole purpose of filing the Reports, the first filing deadline for the Reports was July 8, 2010, with the information accurate as of Nov. 1, 2009. After the first round of filing the Reports, the common filing date was to be Nov. 1 of every odd year. The information to be

ship reports within the one-month period. The Commission's procedures require each entity with an attributable interest in the station to file a separate ownership report, which means that broadcasters with a large number of stations, and multiple levels with their corporate structure, are required to file hundreds of Reports, all with information accurate as of Oct. 1, 2011. The Public Notice indicated that the delay in filing the 2011 Reports is a one-time extension, and that future deadlines were untouched.

One item the Public Notice did not discuss was the requirement of individuals with a reportable interest (including officers and directors with no direct ownership stake in the licensee) in the licensee to obtain a separate Federal Registration Number (FRN). The Commission's FRN system requires individuals to submit their social security numbers (SSN) when obtaining an FRN, and during the last round, there was a significant push back from the broadcasting community against providing the FCC this information. After a trip to the U.S. Court of Appeals, the Commission modified its SSN requirement, and indicated that it would grant a one-time reprieve for the July 2009 Reports, and permit parties to obtain "special use" FRN's if they objected to submitting their SSNs to the Commission.

Flash forward one year later, and the Commission's current information regarding the upcoming deadline does not address whether the "special use" FRN option will be available for the 2011 filing deadline. In light of the Court's skepticism regarding the need for individual SSNs to obtain a FRN in 2010, it is not clear whether the FCC will continue the practice of permitting "special use" FRNs, or whether it will require individuals to provide their SSNs to the Commission during the upcoming window.

As a reminder, all commercial AM, FM and Television licensees, along with low-power and Class A television licensees, must submit the Report. Non-commercial educational broadcasters are submitting their Reports (FCC Form 323-E) with their renewal of license applications. Television and FM Translator licensees, along with Low-power FM licensees, are not required to submit ownership reports. 

Petro is a member of Fletcher, Heald & Hildreth, PLC, Arlington, VA. Email: petro@fhhlaw.com.

Dateline

Sept. 16: All radio stations located in Florida, Puerto Rico and the Virgin Islands continue to run License Renewal Pre-Filing Announcements.

Oct. 1: All radio stations located in Alabama and Georgia being running License Renewal Pre-Filing Announcements, and continue running on Oct. 16, Nov. 1 and 16.

Oct. 3: Noncommercial Television Stations in Iowa and Missouri file their Biennial Ownership Report (FCC Form 323-E). Radio Stations in Florida, Puerto Rico and Virgin Islands file License Renewal Application and EEO Program Report. Noncommercial Radio stations also file their Biennial Ownership Report (FCC 323-E). Begin running License Renewal Post-Filing Announcements.

Oct. 6: Radio Stations in Florida, Puerto Rico and Virgin Islands continue running License Renewal Post-Filing Announcements, continuing on Nov. 1 and 16.

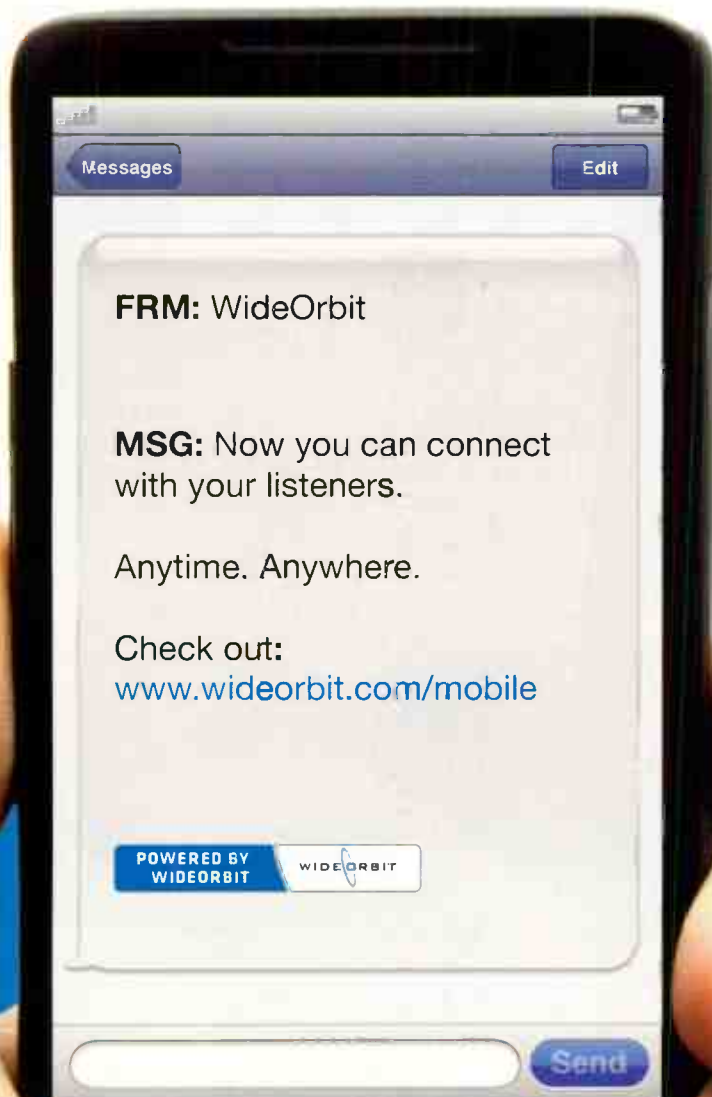
Dec. 1: Commercial Radio and Television stations, including LPTV and Class A Television stations, file Biennial Ownership Report (FCC Form 323).

contained in the Report was to be current as of Oct. 1 of that year, which gave filers one month to prepare the reports.

On Aug. 23, 2011, the Commission released a Public Notice, announcing that it has pushed back the filing deadline for the Reports until Dec. 1, 2011. The Public Notice, adopted by the Commission on its own motion, noted that broadcasters with a large number of stations with multiple levels within the corporate structure may not have adequate time to prepare the owner-

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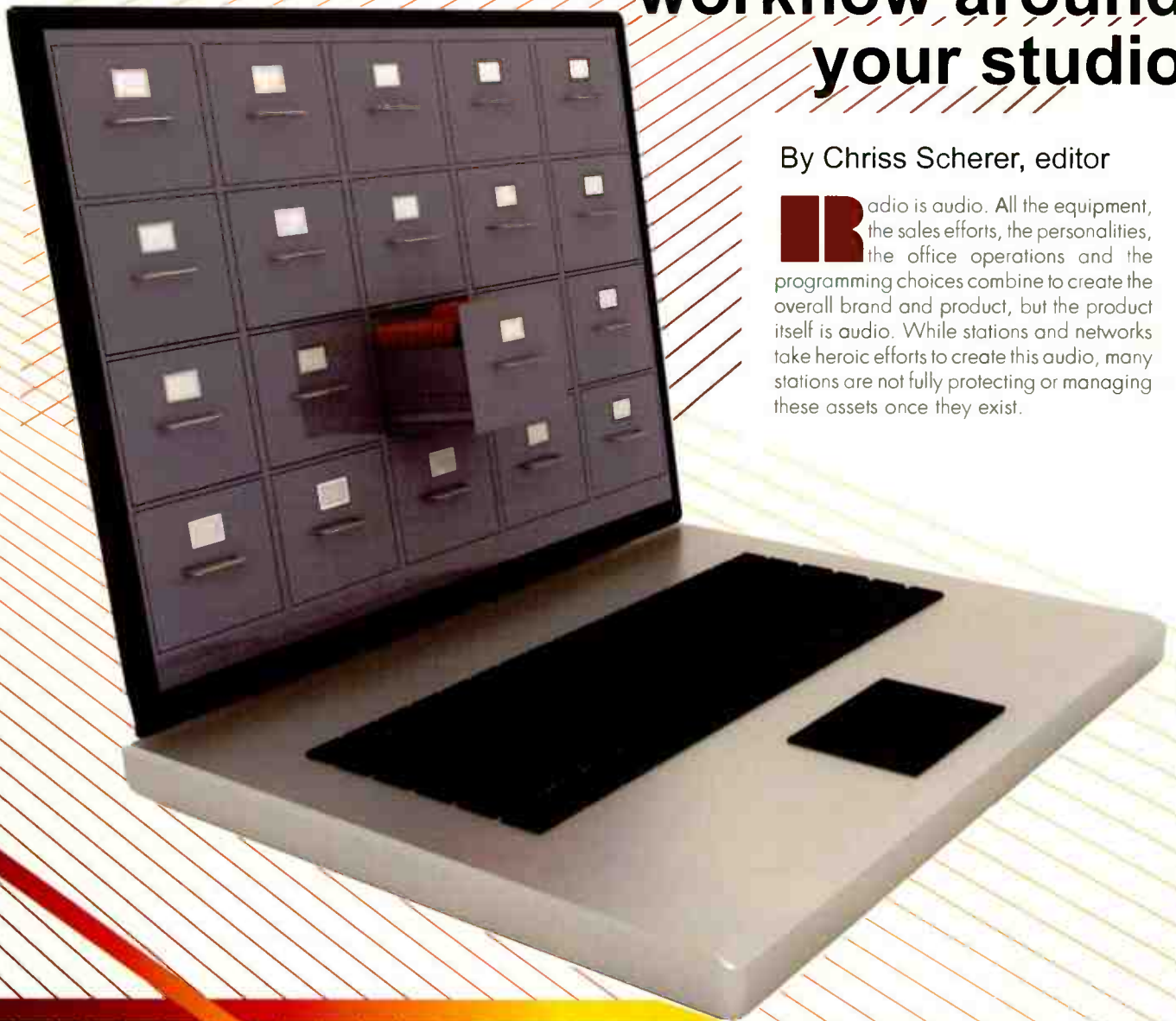
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Managing Audio Assets

How to improve the workflow around your studio

By Chriss Scherer, editor

Radio is audio. All the equipment, the sales efforts, the personalities, the office operations and the programming choices combine to create the overall brand and product, but the product itself is audio. While stations and networks take heroic efforts to create this audio, many stations are not fully protecting or managing these assets once they exist.



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Managing Audio Assets

Most station operations (if not all) are now computer-based. This is an advantage in managing the data we use to create our on-air products. But a final audio product is often composed of many individual elements. For in-house productions, the quantity of ingredients can be significant.

Asset creation

What defines a station's audio assets? Obviously the music being played on the air is an asset (and likely the most extensive). This asset is created when the audio file is imported into the audio playback system.

A station's commercial or underwriting library is an asset. When created in-house, these can be quite extensive works with many individual elements taken from other in-house assets.

Sound effects and theme music libraries are most often purchased, but can also be created in-house. With loop libraries, custom music beds are easy to create even by non-musicians.

Once a program is created or aired, the final version is a new asset. Logging systems have made it easier to capture and save live programs, and many offer the ability to save a very high quality version for a short period to create promos and best-ofs and another version in a compressed format to accommodate long-term storage without requiring extensive amounts of storage capacity.

In the most basic view, audio assets are created on an ongoing basis when an audio file is saved to the server. All these assets have value. Some would be easy to recreate; some would be impossible. But once created, it's important to have a system in place to protect and preserve these assets long-term, as well as be able to easily search and retrieve the files when needed on a daily basis.

Asset storage

While preparing this article, I asked several engineers how they store various assets. While all of them replied that audio files are transferred to a server or servers, many noted that older material was often kept on the original CDs or burned to optical media for long-term storage. This brought up the question about archiving, which we'll examine shortly.

File storage is the function of a file server, and there are lots of options in file server architecture. What can be tricky is when the various types of assets exist on different file servers. If users must access these various systems, files may be stored in more than one place, which can complicate matters.

Is there a need for the on-air automation system to be able to access the sound effects library? Probably not on a regular basis, but the ability to simply access multiple types of assets at a given location can improve workflow. In most cases, a radio station automation system can read files on the same file server that the production system uses, although the production editor and on-air playback system may not be able to access all the metadata associated with various audio files.

Asset archive

I mentioned long-term storage earlier. When a music or production library is delivered on audio CDs, it's easy to import the files to the audio file server and then keep the original CDs as a backup. (Granted, this can easily become a physi-

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Managing Audio Assets

cally large collection.) In case of a crisis, the bulk of a station's music library could be replaced from music collections, CDs or purchased from a service.

With audio files being placed on a file server, common computer storage backup practices can be used to create a robust archive

Saving keywords

Different audio files have different methods of storing their metadata. Most standards have several common fields, which aid database entry, but a field specifically for keywords does not exist. However, there is often a field that can accommodate a larger chunk of text that could be used for keywords.

The Broadcast Wave File (BWF) container has a description field. The Cart Chunk standard (AES46-2002) has a Tag field. The ID3 tagging standard, which is used for MP3 and MP4/AAC files, has a comment field. These would be suitable for keyword use.

Like any keyword effort, using the right terms is, well, key. A music bed could have "guitar," "heavy," and "140" (for beats per minute) as keywords, but users need to know the common standards in place to maximize their search efforts.

of the audio assets. As always, this effort is only as effective as the steps taken to maintain it. Backups must be made on a regular basis, and they should be stored off-site for maximum benefit.

Some automation systems run mirrored servers or systems, which provide an automatic backup system. If the on-air machine fails, the production machine has an exact copy of everything. This practice has saved many stations from total catastrophe.

Another approach to create an off-site backup is to use a station's existing LAN or data link. Links to a transmitter site, another studio site or station cluster or a corporate office can be used to transfer a data backup to these other locations. Some stations create such backups during overnight hours when network usage is low. If necessary, a lower-than-optimal file transfer speed can be used to accommodate for a data path's capacity. And if it's overnight and takes six hours instead of one it's probably not a big deal.

An off-site backup at the transmitter also has the advantage of providing all audio resources at the transmitter site (which often has backup power as well) in case of a total studio failure. All the station's audio content is readily available for emergency on-air operations.

Indexing and retrieval

Now that your station has established a wide range of audio assets, what good are they if they can't be found? This is a dilemma I have seen many stations face. Someone recalls a certain interview from a few years ago, but where is it now? Without some kind of database, all the audio assets are a jumbled

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mess. Descriptive file names and file dates can help, but there has to be a better way.

TV has stored, indexed and retrieved video data for some time. How often do you see archived video on news and entertainment programs? Video systems with this capability can be quite expensive, but the same accessibility can be applied to audio files.

This is where an overall database would work well. Files saved on different systems are usually only searchable within that system. Various audio files have different ways to store metadata within them. Through various data chunks, metadata can be stored in the audio file. Artist name, song title, album name and several other standard fields typically exist. Individual keywords should also be carefully chosen, and a common style should be established to aid user searches.

All this relies on a regular, standardized databasing effort. This

can be a major undertaking on its own, and having multiple users entering metadata on their own can create more problems than are being solved.



Cube-Tec Quadriga is open to any Content Management System and can easily be integrated into existing network and database structures.

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Managing Audio Assets

Audio editing systems, from the most basic to the most advanced, often do not have the tools to search metadata. Files can be manually tagged with metadata, and a separate database can be created to include the same information, but this would require entering the data twice. Consumer media storage systems, such as iTunes and Zune, can read or write some of this data, but can only sort files based on a few fields. Neither is very elegant, but can be implemented for little to no cost. An Access or FileMaker database (or even one in Excel) can store the data for searching.

There are several content management or media asset management systems available that will interface into



Myers Information Systems' ProTrack Radio increases efficiency by maximizing inventory.



Netia Media Asset Management provides a heirarchical organization of content.

existing editors, automation and newsroom systems. Some of the systems that tout this capability include Myers Information Systems ProTrack Radio, Cube-Tec Quadriga and Netia Media Asset Management. The more flexible the search and indexing, the easier it will be to locate audio files, which make a more efficient workflow.

Your current audio asset management plan may work well for your situation, but it's worth talking to the production and on-air staff to see if there's room for improvement.

With all the effort put into creating a station's audio assets, it makes sense to ensure they are protected and easily accessible. Hopefully the ideas presented here will help you reevaluate your current procedures and possibly spark some ideas on areas of improvement.



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Decades on the Mountain Airwaves

After its years of evolution, KUNC settles into its new home serving Colorado's eastern plains and mountain communities.

By Larry Selzle



As the 1960s came to a close, KUNC began broadcasting as a 10W student station on the campus of the University of Northern Colorado. By the mid 1970s, the station had evolved into a Class A, 3kW station, and was Colorado's first radio station to become a member of National Public Radio. The early 1980s KUNC became a Class C1 station. It was during this period that KUNC began to grow its network of translator stations in order to serve listeners on Colorado's eastern plains and in the mountain communities.

The talk studio and control room during KUNC's summer drive.

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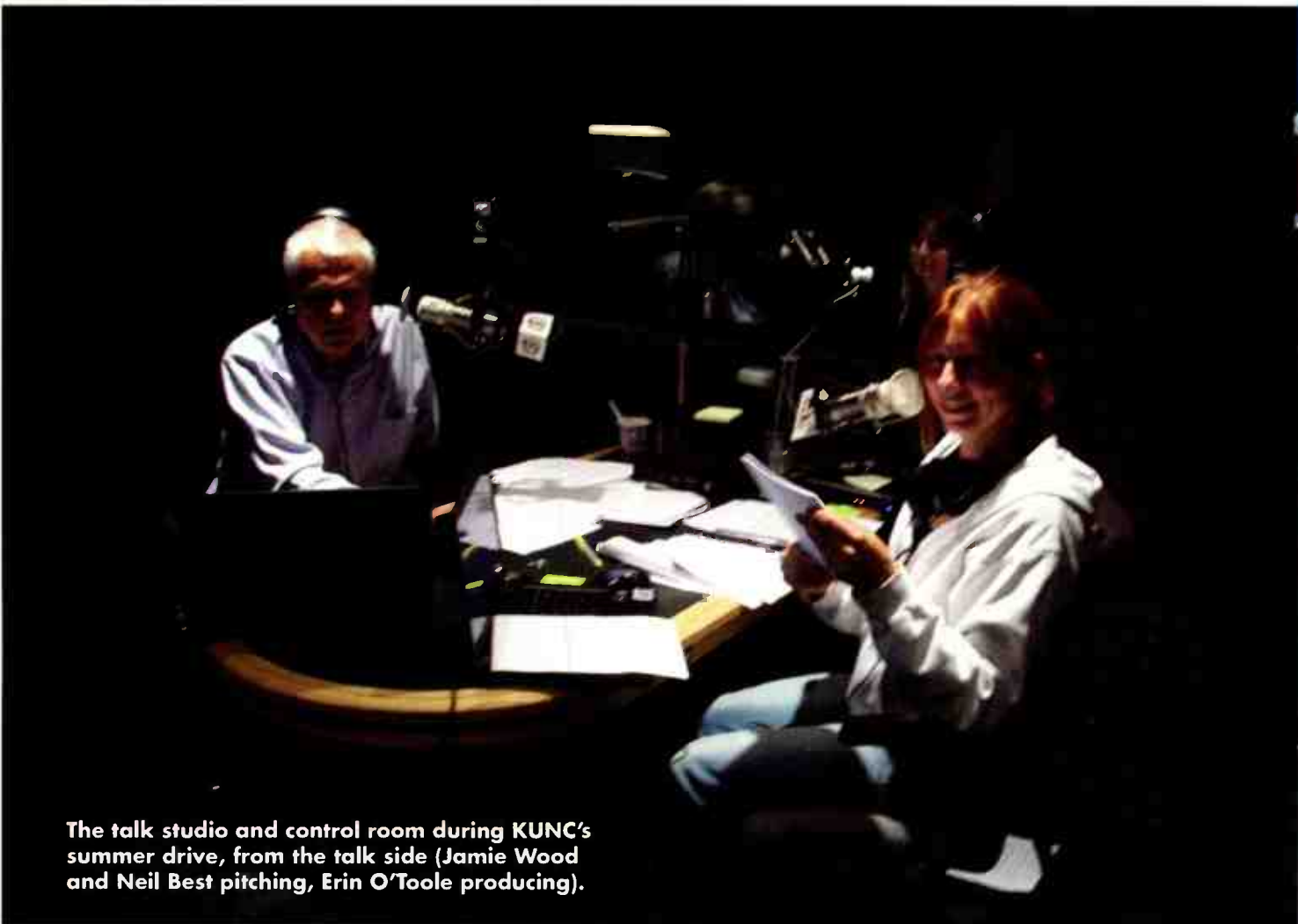


Above: Concierge Switch Core shown with our innkeeper 1rx Digital Hybrid

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JK Audio

KUNC on the Airwaves



The talk studio and control room during KUNC's summer drive, from the talk side (Jamie Wood and Neil Best pitching, Erin O'Toole producing).

For most of my career, I worked for commercial stations in Colorado and Wyoming, but in 2000 was hired as chief engineer for KUNC. In early 2001, the University of Northern Colorado announced that they had reached an agreement with Colorado Public Radio, a statewide public radio network in Denver, to purchase the station. This agreement needed approval from the UNC Board of Trustees. An open meeting was held the next day. Impassioned KUNC supporters pleaded with the Trustees to give them time to raise money in order to buy the station. The trustees relented, and gave KUNC supporters less than a month to submit a counter proposal. A local group organized and raised more than two million dollars to buy the station and retain KUNC's local independence. Community Radio for Northern Colorado was born in March 2001, with the first order of business to move off campus. KUNC settled into a high-rise office building in downtown Greeley, CO. In 2007, KUNC moved its main transmitter from a site north of Greeley to Buckhorn Mountain, just west of Fort Collins, CO. This move added nearly one million people to KUNC's city-grade 60dBu coverage area, which includes the metro Denver area.



Talk studio control room with talk portion on the other side of the glass

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World Radio History

KUNC on the Airwaves



Main on-air studio

Just the right size

In early 2010 our lease in the downtown high-rise office building was about to expire and KUNC needed more room. The building owners could not fulfill our needs, which prompted a search for a new space. We wanted to find a location that had enough room for present needs and future growth, and a space that required very little remodeling. Engineering also had specific needs, including good line of site to the transmitter for the STL, and enough space with an unobstructed southerly look angle for KUNC's 3.7m satellite downlink and 2.4m satellite uplink. After careful consideration, the perfect location was found. An accounting firm previously occupied KUNC's new home. It had offices just the right size for studios, equipment and staff members. It also had a number of rooms that could be easily re-

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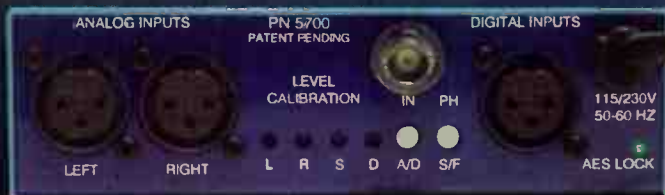
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KUNC on the Airwaves

modeled and soundproofed for studios, great line of site to the transmitter and ample room for the satellite antennas. The new location also had its own walk-in entrance, plenty of parking for staff and guests, and a great view of Colorado's Front Range Mountains to the west. It had everything KUNC was looking for! The lease was signed.

KUNC looked at quite a number of options when considering equipment needs. The old location had an on-air studio, a fully equipped production studio, and another small, very basic production studio. We looked at all of the different console manufacturers, with the need to completely equip four studios. Budget was also a consideration. KUNC had been using the Revolution console made by Arrakis for our on-air studio since moving from the UNC campus in 2000. This console has been an extremely reliable workhorse with

very few problems over its 10 years in service. A quick check of the Arrakis catalog revealed this console still in production. The Revolution console has 12 analog and 12 digital inputs, as well as a host of other features including solid mix-minus buses for the



Production room B

telephone hybrid and a modular design with a separate console engine for ease of installation. Best of all, the Revolution console cost less than many of the competitor's analog-only consoles. It was a real value! The decision was made to equip all four of

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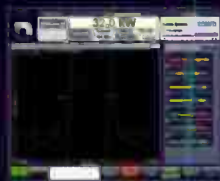
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KUNC on the Airwaves

KUNC's new studios with the Revolution console. Three new consoles were purchased and the on-air console from the old location was moved to the new studios. The producers and on-air folks all like working with the Revolution consoles. They particularly like that they all look and operate the same.

Audio routing

The next question is: How do we get the audio around the facility? The old studios used traditional analog distribution networks. This meant we needed a lot of shielded cable between the studios. Modern studios use audio routers and other technologies to accomplish this. After investigating a number of options, I decided the Arrakis Arc-Net audio networking system was a good fit.

The folks at Arrakis really had their thinking hats on when they came up with Arc-Net, teaming with AudioScience for a very practical, workable and affordable design. Many systems in the field today are custom, one-of-a-kind designs and are manufactured for a particular console manufacturer. Arrakis, on the other hand, uses non-proprietary Cobranet technology distributing digital audio to nodes located in each studio and in the equipment room via Ethernet over a single, standard CAT-5 cable. A number of configurations are available from Arrakis. KUNC's system has four analog inputs and outputs, and four digital inputs and outputs per node in each of the four studios and the



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All audio originates or is routed to the equipment room and distributed to the other studios. Satellite receivers, uplink modem, Arbitron encoder and monitors, ISDN, EAS and air monitoring, audio processing, STL, etc, are all located in the equipment room.

equipment rooms. Audio from any of the five nodes can be routed to any or all of the other nodes on the network. The system can also be expanded when future needs arise. Arc-Net is compatible with any console from any manufacturer, analog or digital. Arrakis worked closely with KUNC on the design for our studios. Its location in Loveland, CO, just a few miles away from the KUNC studios, was also a plus.

Other equipment

Another key component for any studio design is the studio furniture. KUNC engaged the services of Graham Studios, another local business based in Ft Collins, CO. Rod Graham is one of the most talented designers in the business. He is also one of the finest individuals you will ever work with.

Graham Studios makes quality custom designed furniture for the broadcast and recording industry that is shipped worldwide. He designed all of KUNC's studio furniture.

The rest of the studio gear includes Electro-Voice RE-20 mics, DBX 286S processors, Telos One hybrids, O.C. White booms, BE Audio Vault automation, Studiohub SHHP headphone amplifiers, Moseley SL9003Q STL, numerous XLR and 1/4" connectors, RJ-45 crimps, some punch blocks as well as shielded and non-shielded CAT-5 cable. KUNC had very few problems with the move. Some obstacles included securing all of the necessary permits, but that goes with any move. Another problem was getting the STL antennas properly aligned to deliver a strong enough signal for KUNC's nearly 40-mile shot to Buckhorn Mountain. We also had to dig up the parking lot for cabling and electrical service to the satellite antennas. But it all paid off. At 7 p.m. on Saturday, Nov. 6, 2010, KUNC began broadcasting from our brand new studio!

Selzie is chief engineer of KUNC, Greeley, CO.

Equipment list

Arrakis Arc-Net, Revolution
AudioScience ASI2416
Broadcast Electronics AudioVault
DBX 286S
Electro-Voice RE-20, RE27N/D
Graham Studios furniture
Moseley SL9003Q
O.C. White mic booms
Radio Systems StudioHub+
Tascam CD01U
Telos One

Graham Studios Modulux

Graham Studios was pleased to provide KUNC with our Modulux Custom furniture. Design and installation was a collaborative effort that produced world-class results. Modulux is Graham Studios' best-selling line of furniture. Feature rich with choices in wood trim, colors and materials, Modulux will give the station many years of service. Hand-crafted, quality furniture has been the hallmark of Graham Studios for more than 27 years. All the furniture lines offered by the company have been redesigned. The Modulux line now has the feature sets of the former Deluxe line that was introduced several years ago. Advances in technology provided the opportunity to use new materials with new shapes. Graham Studios continues its legacy of quality and choice with its Radius XP Curve furniture line.



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The 2011 Radio Show Preview

RADIO SHOW

The Radio Show in my kind of town

The popular song says Chicago has my kind of raz-ma-taz and all that jazz, but soon, Chicago will also have the annual Radio Show. And this year's show should be a good one. With recent ad revenue reports touting economic improvement, the 2011 Radio Show should be working on a positive swing.

The more central geographic location should draw some new faces and make it easier for those living west to make the trip. Chicago also offers plenty to do outside the convention hours.

The *Radio* magazine convention preview covers what you need to prepare for the convention. We know you want to check out the exhibit floor called the Marketplace, so we have lots of products you'll find there, and the Marketplace map lets you see the lay of the land before you arrive. Also find the engineering session timetable, which includes some non-technical sessions of interest. And we peppered all this with a few ideas of things to do around Chicago once you arrive.

By the time the show ends, I expect you'll be singing: "Each time I leave Chicago is tuggin' my sleeve." Chicago is one town that won't let you down. It's my kind of town.

Chris Schen

New Products

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Access 2USB: Now with two USB ports and support for select 4G Wireless data service modems, Access 2USB provides flexibility for on-the-go broadcasters. Access codecs now ship with AAC coding algorithms (licensed by Fraunhofer IIS) included as well as BRUTE (BRIC UDP Transmission Enhancement), which provides an added measure of robustness for transmission of audio over challenging IP networks.

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Did you know?

The Chicago Water Tower is a contributing property in the Old Chicago Water Tower District landmark district. Located at 806 North Michigan Avenue along the Magnificent Mile shopping district, the water tower serves as one of the Chicago Office of Tourism's Official Visitor's Centers. The Chicago Water Tower is the second-oldest water tower in the United States, after the Louisville Water Tower in Louisville, KY.

The tower, built in 1869 by architect William W. Boyington from yellowing Joliet limestone, is 154 feet (47 m) tall. Inside was a 138 foot (42 m) high standpipe to hold water. In addition to being used for firefighting, the pressure in the pipe could be regulated to control water surges in the area. The tower gained prominence after the Great Chicago Fire of 1871. While some incorrectly believe that the tower was the only building to survive the fire, a few other buildings in the burned district survived along with the tower. But the water tower was the only public building in the burned zone to survive, and is one of just a few of the surviving structures still standing. In the years since the fire, the tower has become a symbol of old Chicago and of the city's recovery from the fire. In 1918, when Pine Street was widened, the plans were altered in order to give the Water Tower a featured location.

The Water Tower was also the architectural inspiration for the design of the first White Castle restaurant.

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MyStationApp: MyStationApp is a service designed to connect fans to their favorite radio station live no matter where they are, by porting PLS streams (multimedia files) onto their smart phones. The app has struck a chord with independent stations that believe apps can enrich the relationship with their audience. MyStationApp features a low implementation cost and a short development time - less than a week in many cases - yet can be completely customized by each station to create a one-of-a-kind product.



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Wireless Bluetooth headset JK Audio

BSET-HS 1: Features of this headset include: a 33' range with most Bluetooth devices; 66' range with JK Audio BlueSet; up to 15 hours talk time; at least 200 hours stand-by time; volume control buttons; answer button; dedicated microphone mute button; low-battery indication; adjustable headband and soft ear cushion for all-day wearing support; LED status indication; USB charging cable; and universal international power supply.

800-552-8346; www.jkaudio.com
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Remote reporting app Digigram

Iqoya*Mobile: Effectively transforming an iPhone into a high-quality MPEG-2 L2 and AAC recorder/editor, mobile IP codec, the Iqoya*Mobile app allows journalists to record audio, edit, add content and send to the studio either live audio over IP or through FTP file transfer. All that is needed is an Internet connection, 3G or Wi-Fi. Iqoya*Mobile is N/ACIP compliant, offering seamless interoperability and a wide choice of audio codecs to match typical broadcasters audio quality/bandwidth usage requirements. It is also compatible with third party IP codecs in N/ACIP mode or RTP symmetrical mode.

703-875-9100; www.digigram.com
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Did you know?

Navy Pier opened in 1916 and was originally called Municipal Pier. It was designed for commercial shipping and recreational use. It housed several regiments of soldiers, Red Cross and home defense units during WWI, and in 1927 it was renamed Navy Pier in honor of those who served during that time. In 1926, the Chicago Federation of Labor established WCFL, "the voice of labor," in the north tower. In 1933 it was host to the Century of Progress Exposition (World's Fair).

The pier was used extensively for military training in WWII. The Navy moved out in 1946.

The Pier was renovated and reopened in 1995 to include entertainment, shops, restaurants, attractions and exhibition facilities.

Trafficking software

WideOrbit

WO Traffic 6.5: This upgrade includes new tools to tag programming for spot placement compatibility or copy violations, create custom, multi-level order approval workflows and book, bill and report on detailed non-linear Internet campaigns. WO Traffic v6.5 enables media companies to manage multiple stations, channels and platforms, as well as multiple media from a single system. WO Traffic is a scalable, enterprise-wide solution with real-time, flexible reporting that delivers visibility and control at all levels of a media business.

415-675-6700; www.wideorbit.com; mzinsmeister@wideorbit.com



Transmitter site audio playback

Nautel

Push Radio: Designed for VS Series transmitters, Push Radio manages audio content to centralize operations at the transmitter site. Building on the local audio storage capabilities of Nautel VS transmitters and leveraging the AUI control system, Push Radio uses Internet distribution to send audio files and playlists to the transmitter, which then plays the content locally. The system will be expanded to send the as-played logs back to the station. A scheduler automates switching audio inputs, playlists, processor or other settings based on time and date rules, while a playlist editor provides drag-and-drop editing. The Orban Inside audio processor provides the audio playback.

207-947-8200; www.nautel.com; info@nautel.com

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World Radio History



Audio network interface

Wheatstone

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WheatNetHP Intelligent Network connectivity to places where the cost of a full-featured blade isn't justified, or where a full Blade I/O complement isn't needed. Featuring one AES digital input, one AES digital output, and six bidirectional logic ports, it's ideal for interfacing an ISDN codec, a telephone hybrid, or any other single I/O device to the network. The front panel has two pairs of 10-segment LED bar graph meters that display the input and output signal levels. There's also a power LED and communications status LED to indicate the network connection is active. The rear panel has AES inputs and outputs on XLR connectors, a WheatNetHP Gigabit Ethernet port, and an RJ-45 connector that carries the universal logic ports. The unit is set up, configured and controlled via Wheatstone's WheatNetHP Navigator software.

252-638-7000; www.wheatstone.com; sales@wheatstone.com



Importer

Harris

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iPhone remote control app

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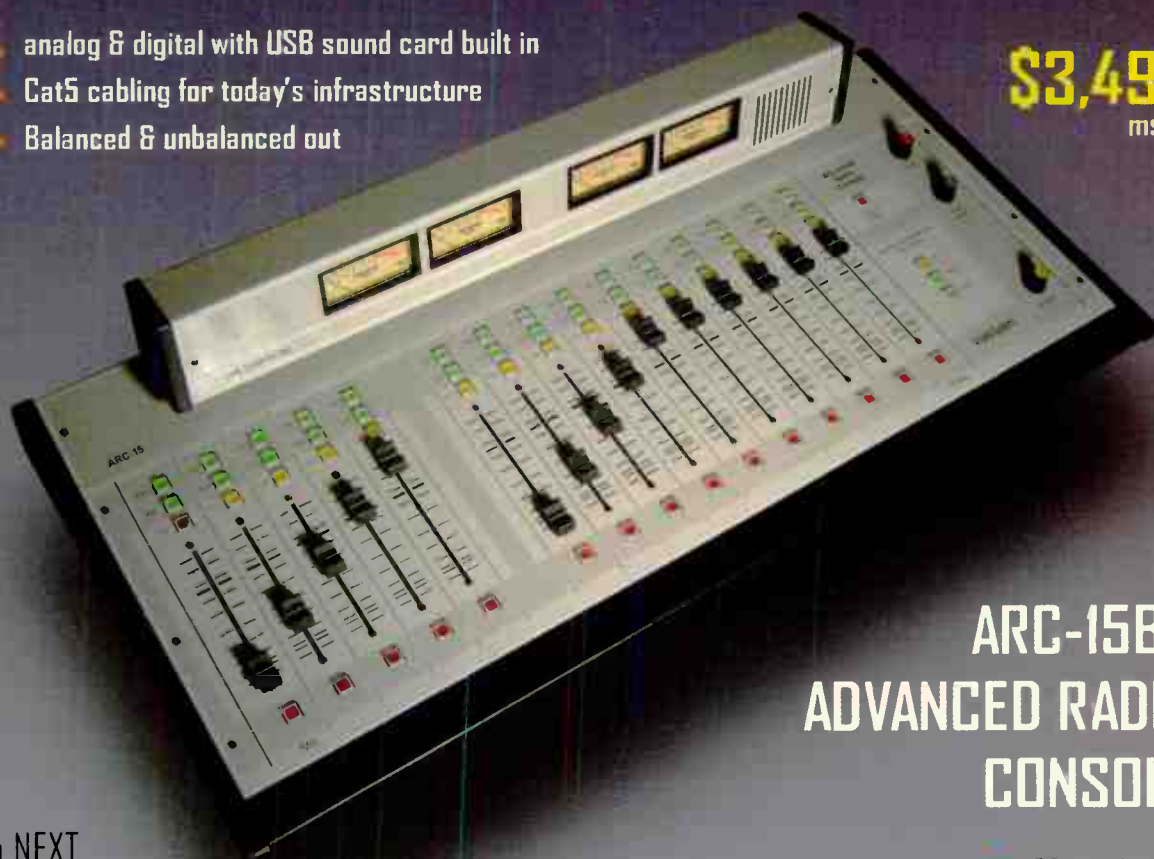
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Broadcast audio processor

Inovonics

David IV: This processor for FM and FM/HD Radio broadcasting features an all-digital, DSP-based design. Comprehensive audio processing includes gain-riding AGC, five bands of dynamics compression and equalization, stereo enhancement and sub-bass augmentation, plus Inovonics' PIPP limiter. Processing is integrated with a high-performance stereocoder (stereo-gen) that includes active and metered RDS combining. The DAVID IV can accept analog and AES-digital inputs, and has two separate composite/MPX outputs in addition to both analog and AES-digital line outputs. The line outputs can be configured for either FM or digital radio transmission characteristics. It may be set up and controlled using the front-panel graphic display and jog wheel, or connected directly to a network for full TCP/IP control over all parameters with a PC and supplied software.

800-733-0552; www.inovon.com; info@inovon.com

Low-power antenna

SPX Communication Technology

Dielectric DCR-XL: With a 1kW power rating, the low-power DCR-XL FM antenna is an ideal solution for small market stations, auxiliary antennas, and college stations.

800-341-9678; www.dielectric.com; dcsales@dielectric.com

Streaming service

Liquid Compass

Mobile Streaming Division for Radio: As with the desktop LC Pro and custom media players, the new Liquid Compass mobile streaming division will develop and deploy apps designed to enhance the overall listening experience for the end-user and, for the broadcaster, build audience share and time spent listening. The new LC ProM app, the first of many apps to be released by Liquid Compass, includes enhanced Now Playing, social networking, Favorites and On-demand features that benefit broadcasters and their end-users with: station branding for the broadcaster, allowing them to keep their brand prominently displayed on one of five available "skins" (custom skins are optional) at all times while the listener is tuned in; and functionality for listeners, allowing them to rate, like or tag songs for later purchase without having to leave or close the app. The social integration feature is especially user-friendly: listeners can send playlist and like (stations or songs) updates to their Twitter or Facebook pages directly from the mobile app. Once sent, the update will post on their individual page, be clickable, and direct other—and potentially new—listeners back to the station.

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Did you know?

The Willis Tower (formerly named, and still commonly referred to as the Sears Tower) is a 108-story, 1451-foot (442 m) skyscraper in Chicago, Illinois. At the time of its completion in 1973, it was the tallest building in the world, surpassing the World Trade Center towers in New York, and it held this rank for nearly 25 years. Following 9/11, the Willis Tower is again the tallest building in the United States and the fifth-tallest freestanding structure in the world, as well as the fifth tallest building in the world to the roof.

Although Sears' naming rights expired in 2003, the building continued to be called the Sears Tower for several years. In March 2009 London-based insurance broker Willis Group Holdings, agreed to lease a portion of the building and obtained the building's naming rights. On July 16, 2009, the building was officially renamed the Willis Tower.

There are two masts atop the structure that support antennas for broadcast stations and other uses. In total there are more than 10 radio stations and more than 15 TV stations located here.

Emergency messaging platform Digital Alert Systems

DASDEC-II: DASDEC-II leverages common information exchange protocols and offers a broad range of physical connections and third-party interfaces. Any standard Web-browser on a PC, Mac or smart-phone can be used to view, change or activate DASDEC functions. With

its optional three internal receivers, it can monitor any standard AM/FM/VX frequency, on any individual receiver with band selection, tuning, level adjustment and even live audio monitoring over the network. EAS alert details are presented on an integrated NTSC character generator screen, or connect the DASDEC to a wide range of other third-party CGs for crawling text overlays or automation control.

585-765-2254; www.digitalalertsystems.com
info@digitalalertsystems.com



Ethernet control surface Radio Systems

Millennium Console Platform: Available in 8- and 12-channel versions, Millennium Consoles The Platform is 100 percent IP. All devices are Ethernet connected. Multiple surfaces, screen-based clients and remote setup and control screens all connect by LAN, WAN and the Internet. Each channel features a select key, four program buses, solo bus, send bus, fader, conference, talk, record and cue buttons, rotary encoder that selects any Platform source displayed on the two-line LCD to the channel strip and calls a list of auxiliary sources available via the center pushbutton knob, option button that sends selected source directly to studio monitors and metering scenes, take button selects a new source to the channel and activates functions called by the option button. The Platform's 7" LCD touchscreen provides access to the home screen and auxiliary input/output screens. The system is supported by an external frame that houses the system DSPs, input/output channels, GPIO interconnects, and connectivity to Ethernet and USB transports.

856-467-8000; www.radiosystems.com; sales@radiosystems.com

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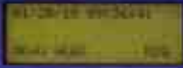
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216-241-3343; www.omniaaudio.com

info@omniaaudio.com

Automation system

OMT Technologies

iMediaTouch v4.2: In addition to full support of 32- and 64-bit versions of Windows 7, the iMediaTouch V4.2 release has significant feature enhancements. iMediaTouch OnAir now provides "quick links" to a variety of social networking sites, auto ducking for Liner EOM adjust, and a new audio library screen added to the blade section. Other feature additions include a new quick access library view in Log tools, Info and Backsell tabs with social networking links added to Voice Tracking, and a "Show Profiles" feature for iMediaImport that allows fully automated ingest of Internet delivered show content. OMT has also introduced new features in our iMediaArchive product designed for large radio groups and NPR stations looking to house very large SQL-based audio libraries. iMediaArchive provides Web browser-based enhanced customizable Boolean search capabilities within the database supporting such fields as composer(s), soloist(s), conductor(s), chorus, master genre and so on. iMediaTouchArchive users can now access audio content from within the iMediaArchive library screen and insert the files right into the MediaTouchOnAir log. Users can also create, edit, delete and save play lists within iMediaArchive and then insert those play lists to any position in the iMediaTouch OnAir log.

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World Radio History



IP audio codec WorldCast Systems

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305-249-3110; www.aptcodex.com; ussales@worldcastsystems.com

Advisory service

BIA/Kelsey

Social Local Media: A new advisory service dedicated to covering the growing and dynamic social media ecosystem and the best opportunities for driving revenues with social platforms, Social Local Media (SLM) will spotlight buyers, sellers, platform developers, vendors, practitioners and thought leaders engaged in the use of social media tools and techniques to forward customer relationships. It will focus on helping media companies and social platform suppliers identify the best integration strategies for implementing social across media, marketing and advertising channels in a manner that drives revenues. SLM coverage will center on: new local monetization models for social networks; metrics that measure social initiatives; social media transactions; social media valuations and valuation models; social commerce; Facebook's continued evolution; social's role in e-mail, reputation and presence management; next steps for check-inservices; and industry analysis of how various media segments are utilizing social channels.

703-818-2425; www.bia.com; info@bia.com

What to eat

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Looking for a sandwich? Chicagoland loves its Italian beef sandwiches. Our insider tells us Portillo's in the River North neighborhood is the place to go.

And the legendary Chicago hot dog loaded with peppers, onions, pickle and more on a poppy seed bun is not to be missed. Hot Doug's is one of the more famous offerings.

And if you knew that White Castle restaurants were modeled after the Chicago Water Tower, you might want to visit Chef Luciano and Gourmet Chicken (E. Cermak and S. Wabash), which is housed in a recently restored with landmark status White Castle restaurant built in 1930. (White Castle is across the street, by the way.)

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Audio delay system 25-Seven Systems

Program Delay Manager Version 2.0: Version 2.0 of Program Delay Manager (PDM) enables PAD or "now playing" data streams to be delayed in precise synchronization with the audio delay as it grows, shrinks, or whenever the dump button is pressed. In addition, full, bi-directional serial control over PDM can now be accomplished from on-air systems or other devices via either RS-232 or IP. PDM features patent-pending PD-Alert email notification with time-stamped audio clips of every dump event and artifact-free audio performance.

888-257-2578; www.25-seven.com; info@25-seven.com

Digital media system Broadcast Electronics

AudioVault Flex Updates: New to its AudioVAULT Flex studio control system is a simple segue editor to manage song transitions and an enhanced voice tracker with gain envelope control for seamlessly crossfading voice tracks with music. The new voice tracker allows talent to add commentary during a song by adjusting audio gain, and to fade music or voice tracks during transitions. Add in AudioVAULT Flex's IP audio networking and studio synchronization features, and broadcasters now have the ability to quickly access music anywhere in the network, syndicate shows individualized by affiliate, and collaborate with talent down the hall or across a cluster.

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Streaming audio encoder Telos Systems

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Colorado Springs

The 2011 Radio Show Floorplan



RADIO SHOW

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Chicago Trivia

Answers on page 53.

1. A famous Chicago cookie manufacturer hit a manufacturing milestone in 1995 with its cream-filled center cookie. Name the baker and the cookie.
2. What is the name of the first planetarium in the Western Hemisphere?
3. Albert Michelson received what honor in 1907, making him the first American to do so?
4. How much is that bear in the window? How much did the Lincoln Park Zoo pay for its first animal, a bear cub, in 1874?
5. How does the Chicago Oceanarium rank in size compared to other aquatic exhibits in the world?
6. The largest ornamental fountain in the world is in Chicago's Grant Park. Name it.
7. Foodies: The Chicago area is the home of McDonald's and Kraft, as well as three major candy manufacturers. Who are they?
8. In 1926, a young pilot named initiated an airmail service between Chicago and St. Louis. Name him.
9. A famous comedy showcase was founded on North Wells Street in a former Chinese laundry in 1959. Name it.
10. The atomic age began in 1942 with the first man-made nuclear fission reaction. Where was it made?
11. There are four stars on the Chicago flag. What do they represent?
12. The Great Chicago Fire of Oct. 8, 1871, destroyed most of the city. Five public buildings still standing predate the fire. Name them.
13. The largest building in America by area is the Pentagon. What is the second largest building by area?
14. Airports have three-letter designations, and many of them seem to have little to do with the airport name. How did O'Hare airport get the ORD designation?
15. Chicago is home to three of the world's tallest buildings. Can you name them? Do you know how tall they are?

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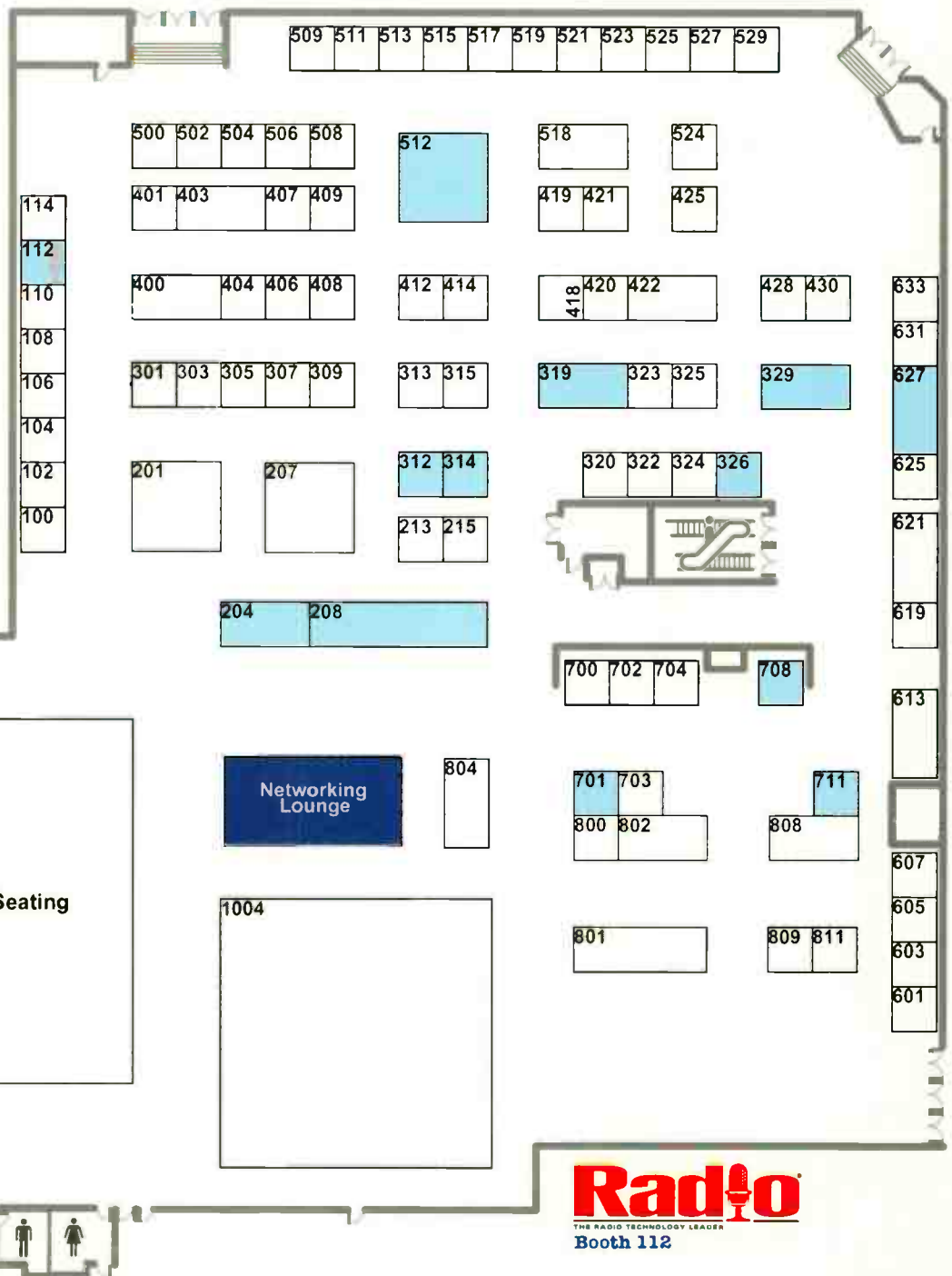
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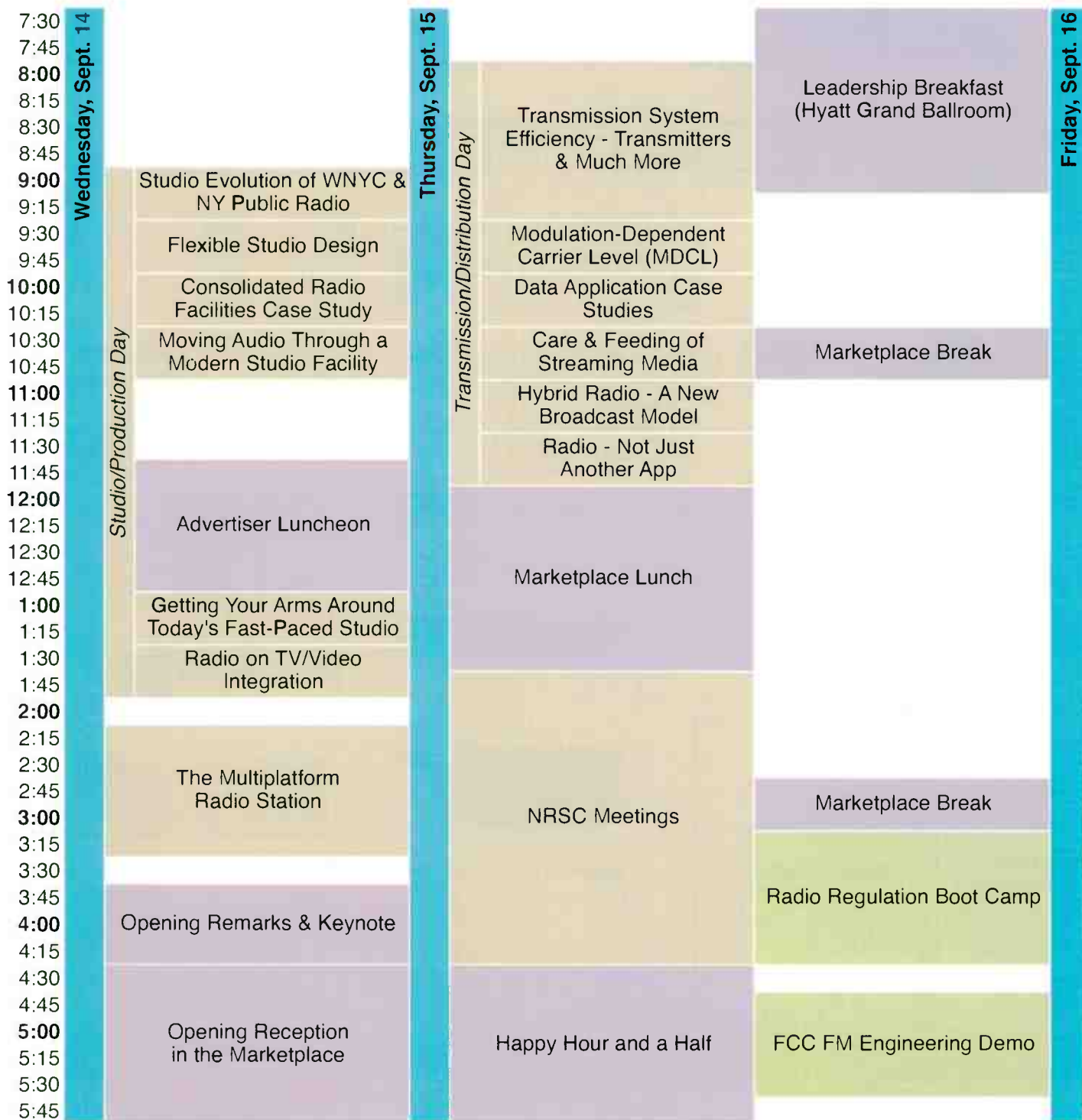
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Radio
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Booth 112

The 2011 Radio Show Tech Sessions



Chicago Trivia

Answers from page 50.

1. Nabsico has the world's largest cookie and cracker factory, and by 1995, 16 billion Oreos had been manufactured here.
2. Adler Planetarium on Chicago's Museum Campus built by Max Adler in 1930.
3. The head of the University of Chicago physics department, Albert Michelson, received the Nobel Prize for Physics in 1907 for his work on the measurement of the speed of light with the Michelson-Morley experiment. He was the first American to receive the Nobel Prize in sciences. The University of Chicago claims more Nobel Laureates than any other institution (64).
4. The first animal purchased for the Lincoln Park Zoo (on Chicago's north side) was a bear cub, bought for \$10 on June 1, 1874.
5. The Chicago Oceanarium is the world's largest indoor marine mammal pavilion. It includes the John G. Shedd Aquarium, which is the largest indoor aquarium in the world.
6. Buckingham Fountain pushes 14,000 gallons of water a minute through 133 jets. It was donated by Kate Buckingham in memory of her brother and dedicated on Aug. 26, 1927.
7. To satisfy your sweet tooth, you can find the headquarters of Tootsie Roll, E.J. Brach and Sons and Fannie May Candies in Chicago.
8. In 1926, a young Charles Lindbergh initiated an airmail service between Chicago and St. Louis. And O'Hare and Midway airports had not yet been built.
9. The comedy showcase "Second City" got its start in what was once a Chinese laundry.
10. On Dec. 2, 1942, Enrico Fermi and a small group of scientists and engineers demonstrated that a simple construction of graphite bricks and uranium lumps could produce controlled heat. The space chosen for the first nuclear fission reactor was a squash court under the football stadium at the University of Chicago.
11. The four stars on the Chicago flag represent Fort Dearborn, the Chicago Fire, the World's Columbian Exposition and the Century of Progress Exposition.
12. The five buildings still standing that survived the Chicago fire are the Chicago Water Tower, St. Ignatius College Prep (1076 W. Roosevelt Rd.), Holy Family Catholic Church (1019 S. May St.), St. Patrick's Catholic Church (718 W. Adams St.) and First Baptist Congregational Church (60 N. Ashland Ave.).
13. The Merchandise Mart is the second largest building in America with 90 acres of floor space.
14. The abbreviation ORD for Chicago's O'Hare airport comes from the site's original name Orchard Field. O'Hare Airport was named in honor of Lieutenant Commander Edward H. O'Hare.
15. Three of the world's tallest buildings are in Chicago, including the tallest building in America. They are the Willis Tower (1,450'), Amoco Building (1,136') and the John Hancock building (1,127').

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-  Keynotes, Receptions and Events

Tips, tricks, hints and more

By Doug Irwin, CPBE AMD

Cure for lost headphones

What happens when a jock forgets his headphones? What about a lost 3.5mm to 1/4" headphone adapter? Does this become an engineering crisis? Kirk Chestnut, CPBE, at the Entercom stations in Kansas City found a way around this.

Some stations keep a stock of house headphones available for this situation, but this can easily be abused. Likewise, a few loose connectors lying about tend to walk away. To solve this, Chestnut repurposed a



piece of vending machine hardware from the station's previous facility. Placed in the common hall area near the studios, the machine is stocked with ear bud headphones and 3.5mm to 1/4" adapters. Priced at \$0.50 and \$0.25 respectively, the supply is always available, even on overnights and weekends.

The station cost is higher than the sale price, although Chestnut buys the supplies in bulk. The modest purchase

price places a value on the merchandise, so the users take better care of it.

Chestnut's only challenge has been finding boxes of the appropriate size to carry the merchandise. He asks the buyers to recycle the boxes.

Where did he get the machine? It previously dispensed products in the ladies restroom.

Stringing MP3s together

Have two MP3 files and need to join them into one, but don't have (or want to open) an audio editor? Use a Windows line command instead. Open a command prompt and type `copy /b thefirst.mp3 thesecond.mp3 newfile.mp3`

The result will be a seamless transition from the first file into the second.

Drying electronics

It isn't too difficult to accidentally drop a small piece of electronics in the drink. This could of course be a cellphone, but there are plenty of other small devices that could find themselves flooded as well. Here's a suggestion about how to handle this little emergency. 1. Take the battery out. 2. If there is a SIM card, take that out as well. 3. Wipe all the moisture off of the outside of the device. 4. Place the device (and battery) in a small container of uncooked rice. Snap on the lid. 5. Take the device out the following day and try it out. Good luck and try not to do that again.

The back of the tube socket

Plenty of us have done transmitter repairs that involved a tube socket. Why does it always seem that there is that one screw/nut/washer combination that won't go back on? And it's the one you can't see? Likely the socket will be oriented so that the screw stays in place by gravity; but still you need to attach the nut (and perhaps a lock-washer as well) on the bottom of the socket. If you simply can't do it with the nut resting on your fingertip, just the smallest dab of silicon (same stuff used for heat sinks) to make the nut adhere enough until you find the screw. Some tipsters have suggested using Super Glue, but that's an extreme approach.

And while you're working over the blower, always put a piece of paper, cardboard or a towel over the airway (where the blower blows air up underneath the socket) to catch anything dropped, rather than it falling into the blower motor. Also, add an inspection mirror to your toolbox to help see around the back of that blower assembly and other tight spots.

Better than Velcro?

Velcro really has its place around a radio station — especially one that does lots of remotes. Is it possible that there is something better than Velcro out there? Power-Grip might just be it. Marketed to guitar players as a way to secure their effects pedals to a pedal board, it can be cut in strips and stuck on like Velcro. The adhesive is designed to be permanent, and the mushroom-shaped posts reportedly form a more secure bond than Velcro's hook and loop system.

www.godlyke.com/power-all/god-lyke-power-all-accessories/power-grip

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Harris Broadcast PR&E Oasis

By Greg Savoldi

St. Gabriel Catholic Radio is a growing, vibrant voice for the Diocese of Columbus, OH. From its beginnings on a rural signal in a basement studio, SGCR moved to its current Columbus studios in early 2009 while securing a time brokerage agreement on a regional AM frequency licensed to Columbus. While our primary source of programming is the EWTN Global Catholic Radio Network, St. Gabriel continues to increase its local programming with weekly shows geared to events and concerns of the local diocese and parishes. While a Mackie 1402VLZ console was wired to do backflips, including mix minus buses for telco and Comrex Access, air monitoring and talkback for remotes, the station was outgrowing the limited capabilities of a board not really suited for an on-air studio. Simple pleasures, like microphone muting and on-air light, extended input channel capabilities, cue bus, multiple program buses, headphone split-monitoring, and enhanced metering were just some of the features I felt were essential to our largely volunteer-based staff of operators and talent. The footprint needed to be efficient, as space is tight. Fewer knobs, more automatic and intuitive features, less chance for error and frustration for our live programming and prerecorded shows.

Available in an 8- or 12-channel chassis, this console was exactly what St. Gabriel needed. All the simple pleasure features mentioned above were met. A/B input switching on all channels covered the need for more sources. I love the metering bridge on this console, in that the on-air PGM 1 metering is dedicated to that purpose, but the second LED metering bank is auto-switching and selectable to the PGM 2 bus, either external monitor inputs, and cue. It is so easy to confirm and monitor levels before you commit-to-live with this comprehensive design. The off-line bus is logically tied to the telco fader for seamless pre/post switching and fader routing for up to two telco feeds. Our goal was automatic to essentials of this nature and Oasis delivers. The feel of a console is very important. While bells and whistles are nice, the layout and touch of faders, on/off/cue/bus/input switches really enhance the operator's ability to deliver a great mix and product. Our operators and production manager really like cooking on this console.

Performance at a glance

- 8- and 12-channel chassis
- Built-in cue speaker
- Automatic event timer
- A and B inputs per fader
- USB interface including payout and record
- Low-profile tabletop mount

Price point/value is always in style but for a non-profit organization, it's a way of life. While I was considering another brand (largely because of lower price), I wondered if Harris had anything available in a 12-fader frame with the fundamental layout and features of their Legacy, BMXdigital and NetWave consoles. Based on seven years of experience with Clear Channel Columbus' seven stations' air studios all running on PR&E Legacy and NetWave frames, these consoles have been reliable and user-friendly, requiring minimal service. A February email exchange with Harris PR&E's Manager of Digital Studio Systems, Paul Barzizza, gave me hope! Paul mentioned the new Oasis audio console was shipping.

Installation

From an installation aspect, what a pleasure! With an easy tabletop design, a built-in cue speaker and headphone amp and jack are standard. With a few small oval holes cut in the cabinetry for wiring feedthrough, wiring is a cinch ... or should I say ... a combicon! It's a Phoenix connector, sized accordingly to the input/output/logic function. No crimpers, no solder, no DB connectors. Strip your wire and push into the connector. The combicons then plug into the back/rear side of the console (the meter bridge hinges up and easily removes).

There are banks of input modules – grouped four to a card. Hot-swappable, you can specify an all-line-level analog input card (on both A and B inputs), or the standard four microphone preamp

card on the A inputs and line-level on the B inputs. (I outboard process all mics, so I opted for the A/B line level card and simply assigned muting to the A side of those channels.) The second input card (faders 5 through 8) is all-line-level analog as standard. If you purchase the 12-frame console, a third card is used. The choice is up to you and complete channel logic is soft; remote start, muting, remote on/off and much more can be changed on-the-fly with supplied firmware. Download the app, use a standard USB cable to get your PC connected to the board (you can do this hot at any time) and you get four tabs worth of comprehensive logic and option control.

Any channel, CR and studio monitors, telco parameters, sample rates, input gain and channel balance adjustments – all in software and so easy – no greenie needed. Simply put, this console installs easily, customs up fast, and is a pleasure to use. Audio performance is exceptional. Primarily designed as an analog-in, analog+digital-out console, the extensible DSP Farm can include dynamics and EQ on every channel. USB I/O with a studio PC is standard. You can specify digital input modules and networked I/O.

The Oasis 12 has been in service for four months and been rock-solid. In April, SGCR ran a live three-day Spirit Drive to raise operating funds. At the center of that event was the Oasis, seamlessly mixing four mics, four RCS Nexgen sources, telco and remote inputs. Football season is not far away and St. Gabriel's weekly Friday night live coverage will be enhanced with the feature-rich talkback and mix-minus capabilities. If you are thirsting for a great on-air/production console at a reasonable price, quench that need and relax with your own Oasis. 🎧

Savoldi is the engineer for St. Gabriel Catholic Radio, Columbus, OH.

Editor's note: Field Reports are an exclusive *Radio* magazine feature for radio broadcasters. Each report is prepared by well-qualified staff at a radio station, production facility or consulting company.

These reports are performed by the industry, for the industry. Manufacturer support is limited to providing loan equipment and to aiding the author if requested.

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Avid Mbox Mini

By Gil T. Wilson

Ever since I got my netbook computer I've tried every way I could think of to turn it into a fully functional production studio. I've had some success and failures in this attempt. USB mics made for some ease but at times seemed limited, and some mixing boards with USB interface were nice but portability became limited. Now, with the Avid Mbox Mini, I think I have found the perfect combination of size and functionality.

An audio interface for a computer, the Mbox Mini can provide phantom power for a condenser mic, direct line-in inputs for musical instruments or audio components, and features capture and mix for high-quality sessions, with up to 24-bit/48kHz audio resolution. The unit I received was the Pro Tools Mbox Mini, which is shipped with a copy of Pro Tools LE. I have worked with Pro Tools before but I'm more comfortable with Adobe Audition. I thought I might have to switch my software for this and installed Pro Tools. After the install, out of curiosity, I tried Audition with the unit. Audition recognized the hardware no problem, and all the production work using the two together was flawless. In fact Avid's website says you

can use Mbox Mini with any Core Audio- or ASIO-compatible software, such as Logic, Live, Record, Reason, Digital Performer, Fruity Loops, Cubase, Nuendo, Sonar and more. I tried the unit with Pro Tools, but the bulk of my production was done through Audition only out of habit. Not only do I use my laptop for production for the radio station, but I also have friends and family who have bands and are always looking for clean recordings, so I took my laptop, a bag of mics, and a small PA system and set to work putting this unit through the works. First off was what I considered a test of all tests: I have an old Shure 55s mic that I treat as my

baby. I love the feel, sound and look of this mic and use it whenever possible. For the longest time I had the mic shelved because I couldn't use it with my portable production studio. The Mbox Mini made it possible to bring this dinosaur out of the vault and use it again. It even made the sound of this mic a little better. I believe I was able to brighten the sound using this unit. I also tried the Mbox Mini with a couple of handheld mics and a condenser mic that I have recently considered my second favorite mic (the AT4040). The unit was the perfect interface between any mic I chose and my netbook computer. I should probably mention that my netbook is a Windows 7 computer. With this unit I am no longer limited in mic selection. The other feature I was able to use in the Mbox Mini is the ability to directly connect musical instruments into my computer. The musicians would connect directly from their amps into the Mbox Mini and then into my production software to create some really nice multi-track recordings. The musicians were able to get the sound they wanted and have the unit give a completely accurate output of the sound. I was able to run a line out using the front headphone jack of the unit to a PA and give the musicians control over how much of the mix they wanted, either more of what they were playing or more of the track they were playing over in real-time. Some of the mixing boards I have tried in the past would have a bit of a delay between live and recorded output and made it difficult for some recordings. This time around, for example, the vocalist could hear the music and sing perfectly with the track. Any production director who composes his/her own music for commercials, would love this unit.

Performance at a glance

- USB powered
- Compatible with most major audio software
- Up to 24-bit/48kHz sample rates
- 2 x 2 simultaneous channels of I/O
- Compact size fits in laptop case
- Weights <2lbs

can use Mbox Mini with any Core Audio- or ASIO-compatible software, such as Logic, Live, Record, Reason, Digital Performer, Fruity Loops, Cubase, Nuendo, Sonar and more. I tried the unit with Pro Tools, but the bulk of my production was done through Audition only out of habit.

Not only do I use my laptop for production for the radio station, but I also have friends and family who have bands and are always looking for clean recordings, so I took my laptop, a bag of mics, and a small PA system and set to work putting this unit through the works.

First off was what I considered a test of all tests: I have an old Shure 55s mic that I treat as my

The right size

At times I wish the unit had more inputs available but realized that I was then venturing into the realm of larger size and realizing this was exactly what was needed and if not Avid does make a bigger version I could look into. I still wish there was more than one XLR connection but any creative engineer can easily work around that.

Since I mentioned it, I should at this point go over the controls and connectors for the Mbox Mini. On the back of the unit are the main inputs, the monitor outputs and the USB 2.0 connection. There are two input channels to work with. Input 1 has two jacks available: a 1/4" jack and an XLR connection with +48V phantom power available and a toggle button to turn the phantom power off or on. There is also a toggle button to select between mic- or line-level input. Input 2 has a 1/4" jack and a toggle button to select between line or direct-in input. The monitor output jacks are two 1/4" jacks.

On the front of the unit are the controls. Inputs one and two each have a gain control knob which when pulled out provides a 20dB pad. Also on the front is the 1/4" headphone jack, which has a mix knob to allow the mix to be more

of input from line or computer. Finally one big knob on front for the monitor output control. At this point I just

have to remark that these knobs are not cheap little knobs each one is rugged and durable. Not that I would want to chance it but I'm sure I could drop this unit and would not damage the knobs in any way.

If you have limited production space or are looking to create a portable production system with a laptop this is the perfect unit to get you started. 

Wilson is an announcer, producer, webmaster and promotions guy at WAKO-AM/FM, Lawrenceville, IL, and an independent producer/voice talent.

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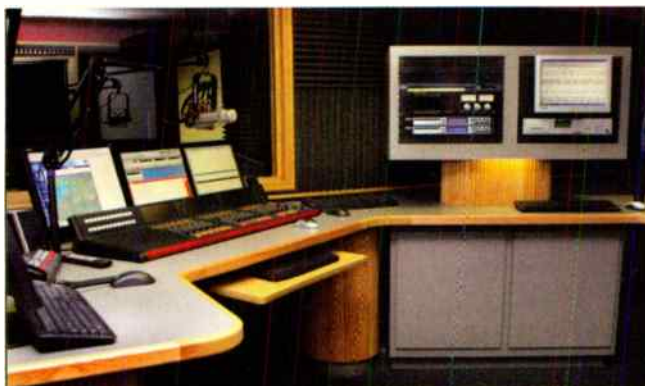
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VN Series: This series features multiple recording modes, plenty of recording hours and double the memory. The VN-8100PC records in MP3 format in addition to Windows Media Audio and is PC downloadable. Scene Select mode offers preset environmental settings: Once a setting is chosen, microphones will adjust automatically. Both devices have 2GB of internal memory and long battery lives. The VN-7000 has 39 hours of battery life and the VN-8100PC lasts up to 51 hours. Set to LP mode, the VN-7000 can record for more than 1,200 consecutive hours and the VN-8100PC can record for more than 850 hours.

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800-662-0032; www.pinta-acoustic.com
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3D surround sound app Dove Presents Enlighten Sound

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808-635-5556; www.dovepresents.com; dove@dovepresents.com

Rotating USB cables L-com Global Connectivity

USB 2.0: Featuring a dual-ratcheting design, USB 2.0 Cables with rotating USB connectors on one end, allow the user to hold the cable in any desired position, especially beneficial in applications in confined spaces. The compact, flexible design makes the connectors ideal for travelers and others who have limited space for operating USB-powered devices.

800-341-5266; www.l-com.com; sales@l-com.com

Headphone accessories KRK Systems

KNS Series Accessories: These accessories feature six different headphone cables, including the 10m and 3m straight headphone extension cables, 2.5m straight headphone cable, 1.5m cable for laptop or portable use, 2.5m coiled headphone cable and the KNS In-Line volume control cable. A special head cushion, one for each headphone system in the line, provides listening comfort and support. The collection also includes replacement ear cushions for both headphones, exactly matching the original, with the 8400 acoustic memory foam design with supple premium leatherette and the 6400 acoustic cellular foam design with standard leatherette. Also available is a 1/8" to 1/4" screw-in adapter and KNS protective bag for travel or storage of the headphone systems.

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Digital migration system NOA Audio Solutions

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+43 1 545 27 00; www.noa-audio.com; office@noa-audio.com



Digital audio distribution amp Sonifex

RB-DDA22: A digital audio distribution amplifier with multiple inputs and outputs, the RB-DDA22 is designed to accept one of five different digital inputs, amplify it and output this to 22 digital audio outputs in five different audio formats, accepting signals with sample rates in the range of 32kHz to 192kHz. The inputs include balanced AES3 on an XLR socket, unbalanced AES3-ID on BNC, balanced AES3 on an RJ-45 socket, unbalanced S/PDIF on a phono socket and a Toslink optical connection. Outputs consist of: six balanced AES3 on XLR plugs, six professional unbalanced AES3-ID on BNCs, six balanced AES3 on RJ-45 sockets, two unbalanced S/PDIF on phono sockets and two Toslink optical outputs, giving 22 outputs in total, 12 balanced and 10 unbalanced.

+44 1933 650 700; www.sonifex.co.uk
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High resolution recording and restoration Sonic Studio

Amarra Vinyl: Based on the same technology used by archivists for recording of analog and digital sources Amarra Vinyl brings together an extensive set of capabilities. With a complement of processing starting with a double precision digital RIAA curve and Sonic EQ users can perform precise adjustments to timbre and spectral sound. The award-winning NoNOISE restoration tools have been used on thousands of major classical CD recordings and support the ability to create pristine-sounding high-resolution audio tracks for use with iTunes and other applications. Amarra Vinyl is designed specifically for the complete audio workflow of recording, processing, and restoration to the creation of individual tracks.

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www.rtsintercoms.com
info@rtsintercoms.com

Portable audio/video recorder Alesis

VideoTrack: Share videos on YouTube, Facebook, and anywhere else on the Web with the VideoTrack, a portable audio/video recorder. Featuring a pair of professional condenser microphones, it also contains advanced DSP image-processing technology. Capture closeup shots with the zoom feature. VideoTrack also doubles as a still-image camera for on-the-go snapshots with and without flash. You can run the VideoTrack on its internal, rechargeable battery or by plugging it into a wall outlet with an optional USB power adaptor (sold separately). It records directly to the included 2GB SD card for more than one hour of recording time right out of the box and connects via USB to virtually any Mac or PC.

800-5-ALESIS; www.alesis.com; info@alesis.com



Audio interface Focusrite Audio Engineering

Scarlett 18i6: An 18-input, 6-output USB 2.0 audio interface, Scarlett 18i6 features two Focusrite preamps and six high-quality line inputs, while an ADAT optical input allows for a further eight inputs. Included is Scarlett MixControl, an 18x6 DSP mixer. It enables the creation of six separate mixes with ultra-low latency, then routing any combination of input signals and sequencer outputs to any of the Scarlett 18i6 outputs, and recall of intuitive one-click configurations. The preamps are phantom-powered and each supply up to 60dB of gain. A high-quality 24-bit/96kHz USB interface with 110dB A/D dynamic range features professional conversion and jitter reduction. Other features include two Hi-Z instrument inputs, dedicated headphone bus with front-panel level control, LED analog input metering and Scarlett plug-ins and Xcite+ bundled software.

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48-track recorder/player Roland

R-1000: The R-1000 is an intuitive stand alone, dedicated recorder/player designed to work with the V-Mixing System in any live event or production. Connect and use the R-1000 with any digital console that has MADI output capabilities by pairing it with the Roland S-MADI REAC MADI Bridge. Sync two units together for a 96-channel recorder/player or sync to video with SMPTE (LTC) or via black burst. All files are stored on a removable hard disk drive (HDD) or solid-state drive (SSD). Material can also be transferred via USB to a connected drive. Virtual Sound Checks are now possible when the R-1000 is integrated with a Roland V-Mixer digital console. Adjust the preamp gains on the console as you would if the band was live and the R-1000 takes care of the gain compensation. Then set compression, EQ, monitors and effects. Setup and configuration can be done using the color LCD touch panel on the front panel or with the PC Remote Control software via a USB connection.

800-542-2307; www.rolandus.com

Sound plugins Waves Audio

Sound Design Suite: With more than 30 plugins, the Waves Sound Design Suite is a comprehensive collection featuring everything from conventional effects to creative sonic textures. Compression, EQ, pitch shifting, level maximization, and more are also featured. 865-909-9200; www.waves.com; info@waves.com



Mic preamp Dave Hill Designs

Europa One: This microphone preamplifier includes phase, phantom power and an instrument input. The microphone input has three input impedance choices (2.2k ohms, 300 ohm and a hi-z choice). The instrument input has an impedance of 1.2M ohms. The gain over all is adjustable in 1dB steps from 0 to 66dB on the mic input and 0 to 30dB on the instrument input. Gain is displayed on a two-digit led display. Unique to the Europa pre-amp are three controls for changing the color of the pre-amp. The first control is a Speed which changes how fast the pre-amp can respond. The level meter has a 0VU reference point of (+4dbu) with one decibel steps. The maximum output level is +24dBu balanced with the maximum balanced input level of +24dBu at 0dB of gain. This allows the Europa 1 pre-amp to be used in a mix environment for coloring.

www.davehilldesigns.com



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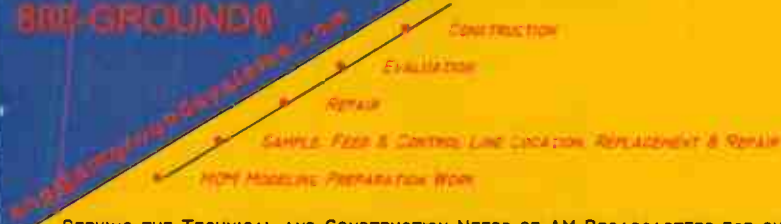
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The screenshot shows the SkimmerPlus web interface. It features a top navigation bar with 'File', 'Actions', and 'Help' menus. Below this are three main sections: 'Closures', 'Decks', and 'Events'. The 'Closures' section lists 11 items, each with a pin number (e.g., 'Closure #1 Pin 21'). The 'Decks' section shows two active decks: 'Deck #1 - WVBO wav' and 'Deck #2 - WVBO mp3', each with a digital display and a level meter. The 'Events' section displays a calendar for July 2009, with a '99.5 the wolf' logo and a list of program times and titles, such as '05:59:49' and '07:47:06'. A 'Back To Channel List' button is visible at the bottom of the events section.

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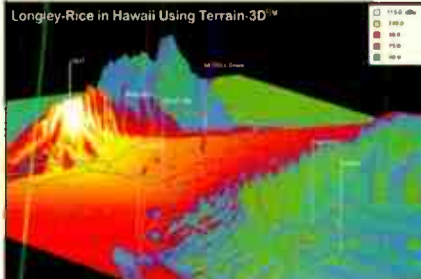
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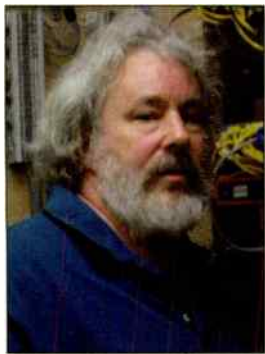
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Contributor Pro-file

Meet the professionals who write for Radio magazine.

**This month:
Facility Showcase, page 22**



**Larry Selze
Chief Engineer
KUNC
Greeley, CO**

Born in Omaha, NE, Selze became interested in radio at a very young age, having grown up in the golden age of top 40 radio. In 1975 he enrolled at the University of Nebraska at Omaha with a major in broadcast journalism. His first job was as announcer at an Omaha station. Having an interest in electronics, he assisted the engineer on numerous occasions. In 1980 he moved to Colorado doing an air shift and more of the engineering at a commercial AM-FM combo station. Over the years my career took me to other commercial stations in Greeley, CO, Ft. Collins, CO, and Cheyenne, WY, as a full-time chief engineer and announcer. In 2000 he accepted the job as the full-time engineer for KUNC. While his daily routine is engineering he still has some time for occasional voice tracking.



**Written by radio professionals
Written for radio professionals**

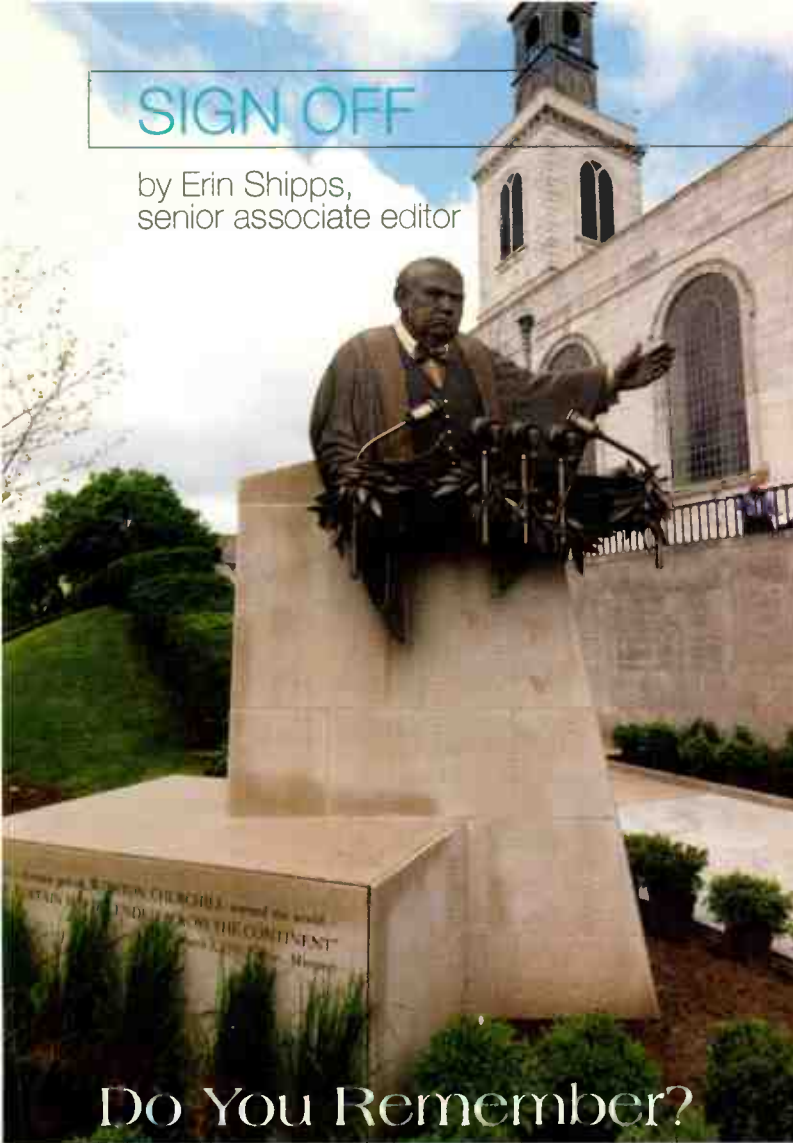
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by Erin Shipps,
senior associate editor



Do You Remember?

Iron Curtain sculpture amplified by mic museum

A Milwaukee museum played a key role in the realization of an Iron Curtain sculpture unveiled on May 13, 2011, at the National Churchill Museum in Fulton, MO. The Bob Paquette Microphone Museum loaned vintage microphones to use as models for a piece that portrays Winston Churchill giving his famous 1946 "Sinews of Peace" speech at Westminster College in Fulton.

Historians often mark the speech as the beginning of the Cold War, and the half-ton, bronze sculpture portrays the British leader – behind a bank of microphones – at the exact moment in the address when he announced that an "iron curtain" had descended across Europe. The models loaned by the museum are the same type used for Churchill's speech.

The microphones that were used for the sculpture, Western Electric models 618 and 633A, are once again on display at the Bob Paquette Microphone Museum, which has been dedicated to the history and evolution of the microphone since 1970. More than 1,000 microphones are in its collection, most pre-dating 1950.

The museum, free and open to the public, is located at Select Sound Service, Inc., at 107 E. National Ave., Milwaukee.



Photos by Dave Urner

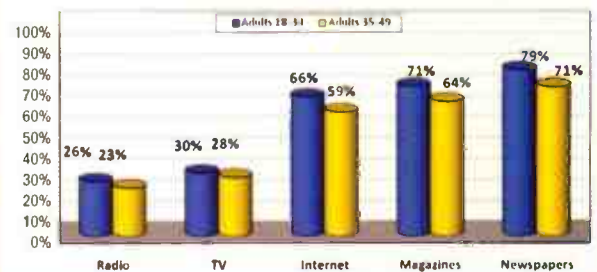
Sample and Hold

Radio leads in engagement factor

A recently released Knowledge Networks analysis explored the simultaneous media usage of major media by 18-34 and 35-49 year old adults. Its findings underscore the personal relationship radio has with its listeners. While people do many different things while listening to radio, using other media isn't often one of them.

Radio listening has the most focused attention of the major media. About two of every three minutes an 18-34 adult spends with the Internet is also spent with other media, while only about 2.6 out of 10 minutes of radio listening time is shared with other media. That means that about 75 percent of time spent listening to radio is spent just with radio, not with any other media.

Simultaneous Use by Medium (Percent of Minutes)



Source: Knowledge Networks and the MultiMedia Mentor research program July 21, 2011, based on Fall 2010 data set, encompassing more than 2,500 interviews.

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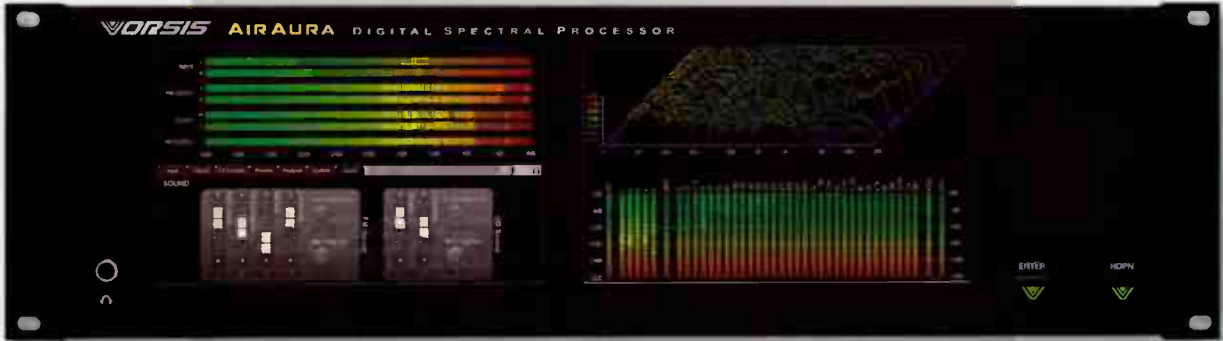
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