

# Radio

THE RADIO TECHNOLOGY LEADER

June 2011

RadioMagOnline.com

## Colorado Consolidation at KTSC

Student-run radio upgrades

**NAB SHOW REVIEW**

Pick Hits, Editor's Picks, new products and more

**FIELD REPORTS**

Blue Mics Mikey and IK Multimedia iRig Mic

#BXBZFT \*\*\*\*\*AUID\*\*SCH 3-DIGIT 856  
#0010545 2# RDM 0010545 E1002  
BARRY MISHKIND  
OWNER ARIZONA BROADCAST SERVICES  
2033 S AUGUSTA PL  
TUCSON AZ 85710-7905  
5062-07258 ZH RDS301  
2800S



Make the Switch to **Presenter** Now...

We'll Convert Your Audio and Data For Free!

**Presenter**, The Ultimate 'Live & Local' Studio System.



When Playing Audio Really Matters.  
(800) ENCO-SYS



www.enco.com



# SPEND THE SAME, BUT SAVE!

There has been a rumor going around that WheatNet-IP Intelligent Network is more expensive. Really??? NOT SO! We're here to say categorically - WheatNet-IP Intelligent Network is NOT more expensive. Some of our components may cost a bit more but are way smarter, can do far more, and eliminate expenses that less intelligent networks still need. While it's easy for others to make selective comparisons, when you add up all the costs for your network, WheatNet-IP comes out to just about the same money as the other guys. No marketing mumbo jumbo about your labor or performance here - we're talking straight hardware comparisons. Go ahead - configure your network and see. Of course we DO out-perform them by up to a factor of ten. And we DO save you great googobs of money by giving you a system that configures, runs and heals itself... Still, do a full-network hardware comparison and check it out for yourself! Operators are standing by...



THE INTELLIGENT NETWORK™



phone 1.252.638-7000 | [WheatNetIP.com](http://WheatNetIP.com) | [sales@wheatstone.com](mailto:sales@wheatstone.com)

## IS YOUR ADIP NETWORK AN INTELLIGENT NETWORK?

Download the FREE white paper "The Business Case for the Intelligent Network" at [WheatIP.com](http://WheatIP.com)





# WHY MORE BROADCASTERS are choosing Nautel

## MORE Innovation



More than 1,100  
AUI capable  
transmitters  
shipped.

## MORE Control



### AUI: Advanced User Interface

Nautel invented the AUI system with its advanced control and instrumentation to help engineers **SAVE TRIPS, SAVE TIME** and **SAVE MONEY**.

## MORE Support

Nautel has never discontinued support for any product, ever. That's just one reason why Nautel support is renowned in the industry. New innovations like the AUI not only help you but help us support you when you need us most.

## MORE To Count On

**#1** Nautel has emerged as one of the world's largest manufacturers of Radio Broadcast transmitters.

### ZERO debt

Nautel is a conservatively managed company free of debt.

**Four Decades** of consistent ownership.

**10,000+** Nautel transmitters shipped.

Making Digital Radio **Work**.

[nautel.com](http://nautel.com)

## CONTENTS

14



10



58



### ON THE COVER

Colorado State University – Pueblo combines its student facilities for radio and television into one cohesive, cooperative operation. Read about it on page 50.



## Features

- 14** 2011 NAB Show Pick Hits  
See the 15 products chosen by our judges
- 24** NAB New Products  
by Erin Shipp  
Even more new products, including the Editor's Picks
- 48** NAB Photo Blog  
View the 2011 NAB Show through the *Radio* staff lenses
- 50** Facility Showcase: CSU-Pueblo's KTSC  
by Sam Lovato  
This Colorado consolidation combined media efforts
- 56** Tech Tips  
by Doug Irwin  
Installing a directional antenna

## Columns

- 8** Viewpoint  
by Chriss Scherer  
Another NAB Show in the books
- 10** Managing Technology  
by Kevin McNamara  
Keep the remote site safe and secure
- 12** FCC Update  
by Lee Petro  
Update on LPFM and its effect on full-service stations

## Departments

- 6** Online  
at [www.RadioMagOnline.com](http://www.RadioMagOnline.com)
- 58** Field Report: Blue Mics Mikey  
by Chris Wygal
- 60** Field Report: IK Multimedia iRig  
by Barry Thomas
- 68** Classifieds
- 69** Contributor Pro-File  
Meet Sam Lovato
- 70** Sign Off  
by Erin Shipp  
New stats on media usage and radio listenership



# One touch sports remotes without the tackling...

Choose from Commander 3 input or iMix 6 input field audio codecs for studio quality audio and simple 1 touch connections for non-technical talent.

*Commander and iMix codecs are a Sportscaster's dream machine.*

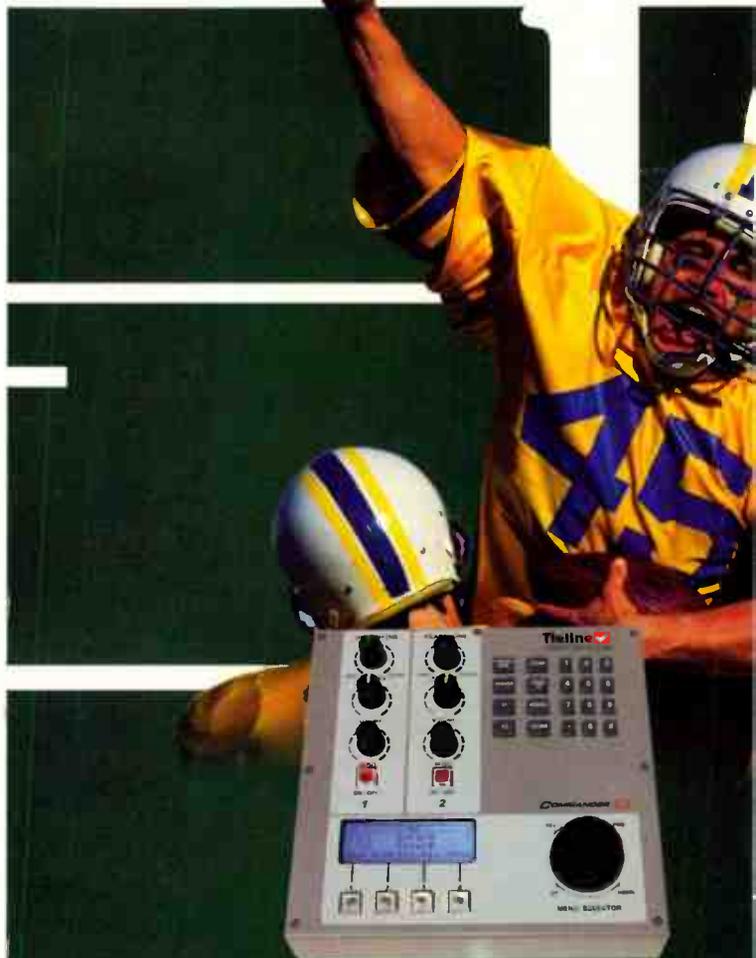
From high school sports and talk shows to the Olympics; Tieline codecs are a proven sports remote tool.



- One touch connections over POTS, ISDN, IP and wireless 3G/4G\*. Connect anywhere, anytime.
- Tough metal box to tackle the toughest conditions remote after remote.
- Built in audio mixer, relays, RS232 and full duplex comms with the studio.
- Got 2 simultaneous remotes over different networks? No problem! Connect two Tieline remote G3 codecs to the same studio codec and save money.
- Compatible with Comrex\*\* over POTS plus most IP and ISDN codec brands.

**Tieline**   
www.tieline.com

\*POTS, ISDN and Wireless Modules are optional in the Commander. ISDN and Wireless are optional in the iMix \*\*Comrex is a registered trademark of Comrex Corporation Massachusetts.



Commander 3 Input IP Audio codec from **\$2650 list**



iMix 6 Input IP audio codec from **\$3800 list**

Order your free Commander or iMix demo codecs now.

**317-845-8000**

## Currents Online

Selected recent headlines from www.RadioMagOnline.com.

### EAS @ 2011 NAB Wrap Up ➔

Gary Timm shared his view of EAS from the 2011 NAB Show at the AWARE website.

### NYC Unveils Nation's First Public Safety System

PLAN is a free service that will allow customers with an enabled mobile device to receive geographically targeted, text-like messages alerting them of imminent threats to safety in their area.



### Alabama Storm Warnings Use Alert FM for Signaling

In Alabama, the Alert FM system is deployed in 18 counties across one-third of the state.

### Digital Alert Systems Dasdec, Monroe Electronics One-Net Complete IPAWS Conformity Assessment

The IPAWS Conformity Assessment verifies the products conform to requirements for receiving alerting messages from the FEMA IPAWS system.

### Burk Technology Brings IP to GSC3000 and VRC2500

The GSC/VRC IP Converter offers IP connectivity tailor made for the GSC3000 and VRC2500.

### TFT Offers Options for Model 3320 CAP-to-EAS Converter

The new options expand the capabilities and applications of the Model 3320 for text-to-speech conversion, external relay closure and an LCD setup panel.

### Nautel Surpasses 10,000 Sales Worldwide

While Nautel started with solid-state transmitters 42 years ago, the recent history of company has been marked by accelerated growth.

## Find the mic and win!

Tell us where you think the mic icon is placed on this issue's cover and you could win a prize courtesy of Hosa.

We'll award a different prize from Hosa each month during 2011.



This month, enter to win a 3-pack of Hosa HMIC-025 mic cables.

Enter by July 10. Send your entry to [radio@radiomagonline.com](mailto:radio@radiomagonline.com)

Include your name, job title, company name, mailing address and phone number.

[www.hosatech.com](http://www.hosatech.com)

No purchase necessary. For complete rules, go to [RadioMagOnline.com](http://RadioMagOnline.com).

## Site Features

### Pick Hits Videocasts

Want to learn more about the 15 top new products from the NAB Show? Watch the Pick Hits Videocasts.

### Find Us on Social Networks

We're also on Facebook, Twitter and LinkedIn.

### Digital Radio Update Twice a Month

Stay up to date with the source of digital audio broadcasting news and information. The coverage extends to DRM, satellite radio and more. Subscribe today.

### Even More New Products

We post new product info online as we receive it, and not only the new stuff from the convention. The twice-monthly New Products Extra email newsletter brings them all to your inbox.

### Advertiser Links

Web links to the advertisers in the June issue.

### Industry Events

The *Radio* magazine Industry Events section lists upcoming conventions and conferences.



# BETTER Radio Begins with **BE**.

*Same BE reliability, only better.*

*Introducing NEW studio and interactive products from Broadcast Electronics.*



AudioVAULT  
**FLEX**

The most reliable and most expandable studio control system now offers updated skins, tabbed gadget docking, audio hook and loop creation, an enhanced segue editor and a brand new built-in audio editor.



**CROWD CONTROL**

New interactive tools to empower your listeners by letting them pick what plays next! Mix this with social media like Twitter, Facebook, and SMS and your station rises to a whole new level of interactivity. BE has partnered with LocalMedia to bring you these amazing tools.



**the radio experience**

The Radio Experience now provides album art and station graphics on HD Radio for the new Artist Experience. Also new, TRE now aggregates RSS feeds into your datacast stream. Giving you the most advanced set of tools to support your station's datacasting and advertising campaigns on RDS and HD.



**tagstation**

TagStation, combined with The Radio Experience software, uses song data from your automation system to create intelligent matches within the iTunes™ Store music database. Whether you are tagging songs on your iPod Nano, Zune or HD Radio, TagStation ensures your listeners have a positive and accurate purchasing experience.



Broadcast Electronics • 4100 North 24th Street, Quincy, Illinois 62305-3606 U.S.A.  
Telephone: (217) 224-9600 • Fax: (217) 224-9607 • E-Mail: [bdcast@bdcast.com](mailto:bdcast@bdcast.com) • [www.bdcast.com](http://www.bdcast.com)

Follow us at [twitter.com/FollowBE](https://twitter.com/FollowBE)

World Radio History





## Another one for the books

**Y**et another NAB Show has come and gone. The frenzied week of meetings, sessions, exhibits and general broadcast camaraderie has such a long build-up, and then it seems it's over in a flash. Well, not completely over.

You know by now that attendance was up from last year, albeit not yet as high as 2008. But it's on an upward swing.

The increased attendance, coupled with the generally positive economic outlook certainly added to the overall positive feelings on the exhibit floor. All the exhibitors I spoke to said it was a good convention. Attendees as well had positive feelings about the week's activities.

So what was hot? That's the question I hear every year. The easy answer is to look at the *Radio* magazine Pick Hits. Look at the technology they cover and it's easy to get a feel for the trends at the convention. This year also adds the Editor's Picks, which are part of our convention review as well.

A topic of importance to the NAB was adding FM to cell phones. This was mentioned quite often, although outside a specific display, there's not much to see related to the idea. That's an ongoing discussion that for now has no obvious resolution waiting.

Adding data to transmissions and station websites continues to be a popular topic. While iBiquity continues touting and showing the Artist Experience features, automation system providers are further developing their content management capabilities to feed it, RBDS and website functions.

The data capability also related to increased attention to enhancing the listener experience of radio in any form. The basic program service data is merely an entry point. Feeding handheld apps, Twitter/Facebook integration and crowdsourcing are ways to attract listeners in the ever-expanding pool of media choices.

And while radio is obviously an aural medium, we're starting to get the hang of video. No, not to transmit slow-scan images, but as enhanced content on websites or via handheld apps. In the last few years, many stations have looked at studio

lighting options to stream shows from the studios. Now radio is looking at systems to capture and deliver video from the field.

*Radio* magazine is even getting on the video bandwagon with our first series of Pick Hits Videocasts. Get a closer look at the 2011 Pick Hits in these 15 videos at RadioMagOnline.com.

Meanwhile, underneath everything, we continue to see IP as an ever-present element. Audio over IP is only part of it, with many (if not most) codecs, studio mixing/routing, phone systems, automation and STLs including it. But IP control, including SNMP, is being added to nearly everything. With a browser or a dedicated app, it seems nearly everything was being accessed via some kind of handheld device.

A good portion of this issue is dedicated to what we saw at the 2011 NAB Show, but there's always more. I'm curious to know what you saw and found interesting. Let us know by commenting on the articles at RadioMagOnline.com. 

*Chris Scherer*

# The World's Most Popular IP Codec...



...Is Now Even Better!

## Introducing ACCESS 2USB

Get the story wherever you are with more ACCESS than ever before. ACCESS 2USB now gives you two USB ports, support for select 4G Wireless USB modems and now includes MPEG-4 AAC Coding Algorithms standard! The best just keeps getting better and better!

IP • 3G • Wi Fi • 4G • BGAN / VSAT • PSTN • DSL

### UPGRADE YOUR ACCESS CLASSIC TO SUPPORT 4G – FREE!

Your ACCESS Classic can be upgraded for 4G support...absolutely FREE! Just update your firmware to the latest version, available on our website:  
<http://www.comrex.com/support/products/access.html>



## A DIY approach to securing your site

By Kevin McNamara

As long as we have had remote transmitter sites, we have had the issue of keeping unauthorized people off the property. It wasn't really a problem when the sites were manned (anyone remember that?); however, the advent of remote control systems made that luxury disappear in the late 1960s. That was a different time: Generally people showed up to act on a testosterone- (or liquor-) induced idea that they would climb the tower, rather than plot to destroy the site. Here we are, post 9/11, in one of the worst economies the U.S. has experienced in years. Copper prices are more than \$4 per pound and your remote site represents a treasure chest to some people.

Keeping a site secure fulfills a number of objectives such as 1) Protecting the general public from potentially hazardous situations (i.e. electrocution, non-ionizing radiation, falling objects, etc.), 2) Deterring unauthorized people from climbing (or getting near) the tower(s), 3) Keeping exposed/exterior equipment (HVAC, power lines, coaxial cables, ground systems,

the FCC in 2002, The Media Security and Reliability Council (MSRC). According to the mission statement posted on its website, the committee exists: "To prepare a comprehensive national strategy for securing and sustaining broadcast and MVPD facilities throughout the United States during terrorist attacks, natural disasters and all other threats or attacks nationwide."

The MSRC's website has some great information, including checklists that will help you assess a facility's risk to a number of security threats.

Obviously the main components of keeping a site secure are adequate fencing, barbed wire, solid doors, locks, good lighting and alarms. But these keep out the "casual" thief. Anyone with a strong desire (and enough time) to gain access will breach your compound, so the question is really more of how to minimize theft or damage to the critical components of the transmission system, and what is the best way to monitor the site? This is also a problem faced by cellular carriers, who operate thousands of remote sites nationally. Interestingly enough, it isn't just the sites that are in the middle of nowhere that get vandalized; they experience more theft at sites in urban areas, including those on rooftops. Here are a few practical tips that you can use at your sites.

### Outdoor components

The next time you replace your ground wires and other copper terminations, consider using silver- or tin-plated components. Apparently copper thieves tend to stay away from metals that look like aluminum. You get the same performance as using copper. This approach has proven to be an effective deterrent and is very popular with communications systems operators.

External HVAC compressor units, especially the ground-mounted variety, are a favorite target of copper thieves. There's not a lot you can do here except to get the units mounted on a roof, if possible. If you need to replace units in the future, consider commercial wall-mounted systems. They tend to be too much work to remove and are less desirable.

If you are building a new site, be sure to design the building so the coax entry ports and ice bridges are elevated as high as possible.



### Remote sites are an attractive target for copper thieves.

guy wires, etc.) protected from damage and/or theft, 4) Properly securing all buildings.

Since the events of 9/11 there has been a great deal of focus on the security of remote wireless sites used for public safety, cellular and broadcast facilities. Various federal and state agencies and committees have created guidelines and checklists to help licensees secure their infrastructure, including remote/unmanned tower sites. One such committee was formed under

On existing shorter runs, coax can be mounted inside a cable trough with a locking cover. If the entry point for the coax is lower, you can have a custom dog house fabricated. The dog house is essentially an enclosure large enough to accommodate the number of cables and allow required bend radius. These are generally attached directly to an exterior wall or roof, covering the entry port on one side and connected to the enclosed cable trough on the other, ideally keeping the cables unexposed and protected.

## Monitoring the site

Most sites utilize the remote control system to alert an operator that a door is open or a proximity sensor has gone off. While it might let you know someone has stopped by, it doesn't really tell what is actually occurring. The better solution is to implement a digital video recording (DVR) system that records several cameras, along with date/time stamping. These systems have become very affordable (less than \$1000, with cameras) and include some very cool features such as motion detection (through the camera). Cameras can be viewed remotely, including on

## Resources

**MSRC**

[www.mediasecurity.org](http://www.mediasecurity.org)

**Zoneminder**

[www.zoneminder.com](http://www.zoneminder.com)

3G smart phones, and can initiate notifications via voice, text or email.

If you feel more ambitious, have a PC lying around and have a little Linux experience, Zoneminder is a free open-source surveillance application that offers several powerful features not found in the lower-cost systems. For example, you could utilize an air-card at the remote site to enable some broadband access and view cameras in real-time, if the site isn't located near an area that offers traditional broadband cable, telco or wireless services. Zoneminder also supports standard video, IP cameras and X10 devices. Zoneminder is also flexible enough to be configured for multisite operation if desired.

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

## CBT Systems Introduces the New JUMBO Light



- Made in the U.S.A
- JUMBO sized at 33"W x 9"H x 3.75"D
- LED Illumination
- Custom legends are available in Blue, Red, & Black
- Power - 120 to 220 volt AC & 12 volt AC/DC

CBT Systems' "ON-AIR" Lights can be ordered online at [www.cbtsystems.tv](http://www.cbtsystems.tv)

or by calling **858-536-2927**  
to locate a distributor near you



## FCC studies impact on LPFM service

By Lee G. Petro

**T**he February 2011 FCC Update provided an overview of the Local Community Radio Act of 2010 (LCRA), and the rule changes that the law requires the FCC to make in response. Changes to the level of protection that LPFM stations must provide to full-service FM stations and FM translators were discussed, along with ambiguous language relating to the establishment of priority of LPFM stations in relation to pending FM translator applications are awaiting resolution through a rulemaking proceeding.

The LCRA also required the FCC to conduct an economic study on the impact LPFM stations will have on full-service FM stations. Other than the general directive to the FCC that the study must be completed, no further direction was provided under LCRA as to what economic parameters should be reviewed, or how the study should look at the end of the day.

So, effectively with a blank slate, the FCC released a notice seeking input from the public on both the scope of the required study, along with information relating to the specific questions raised in the LCRA. The Commission assumes the study would necessarily

have on audience ratings for full-service FM stations. The Commission acknowledges that the service area of LPFM stations is relatively small, but questions whether LPFM stations draw audiences away from full-service FM stations in the same market. The Commission asks for before-and-after audience shares from those that would conclude that there has been an impact after the 2000 commencement of the LPFM service. Also, since more than 50 percent of the LPFM stations are outside of Arbitron-rated markets, the Commission is also seeking information on other ways to measure the audience in these markets.

Next, the Commission intends to study whether LPFM stations will economically impact full-service FM stations. While LPFM stations are noncommercial, the FCC notes that, through the underwriting and sponsorship of programs, revenue that may have previously been directed to full-service FM stations in the market may be redirected to LPFM stations. Thus, the Commission asks whether the LPFM service has had this impact since 2000, and whether there is any accurate reporting mechanism to determine the impact of more LPFM stations in radio markets.

The Commission is also looking to define the relevant markets before looking at the economic metrics. First, the Commission proposes to look only at the areas where LPFM and full-service FM stations have overlapping contours, as the Commission concludes that this is where most of the direct impact is likely to occur. Next, the Commission will look at the overall impact of LPFM stations in the respective Arbitron markets regardless of any overlapping service areas.

Notably, the FCC will not be looking at the economic impact of interference caused by LPFM stations to full-service FM stations. The Commission appears to have reached the conclusion that other portions of LCRA created remediation procedures that should eliminate the economic impact of interference on full-service FM stations. The Commission will entertain comment on whether this conclusion is correct, so parties that seek to have this metric considered in the report should consider submitting comments.

Given the breadth of the Commission's call for comments, those that have information on the economic impact of LPFM stations should strongly consider filing comments. It is likely that this study will establish the blueprint for any modifications to the service in the future. Comments are due to be filed June 24, 2011, with reply comments due July 25, 2011. 

*Petro is a member of Fletcher, Heald & Hildreth, PLC, Arlington, VA. E-mail: petro@fhhlaw.com.*

### Dateline

June 1, 2011: All radio stations in the District of Columbia, Maryland, Virginia, and West Virginia file License Renewal application and EEO Program Report, and run License Renewal Post-Filing Announcements on June 1, June 15, July 1, July 15, Aug. 1, and Aug. 15, 2011. Non-commercial radio stations also file Biennial Ownership Report (FCC 323-E).

June 1, 2011: Radio stations in North Carolina and South Carolina run License Renewal Pre-Filing Announcements on June 1, June 16, July 1, and July 15, 2011.

June 1, 2011: Stations in Arizona, the District of Columbia, Idaho, Maryland, Michigan, Nevada, New Mexico, Ohio, Utah, Virginia, West Virginia and Wyoming must place their Annual EEO Public File reports in their public files.

August 1, 2011: All radio stations in North Carolina and South Carolina file License Renewal application and EEO Program Report, and run License Renewal Post-Filing Announcements on Aug. 1, Aug. 15, Sept. 1, Sept. 15, Oct. 1, and Oct. 15, 2011. Non-commercial radio stations also file Biennial Ownership Report (FCC 323-E).

be based on prior experiences with the LPFM service, despite the fact that the LCRA's study requires the FCC to predict the impact LPFM service will have on full-service FM stations, i.e., in the future. At the same time, the Commission does take a stab at suggesting several "metrics" that should be studied and for which it seeks more information.

First, the Commission seeks information relating to the direct or indirect impact that the LPFM service will

You work in all kinds of conditions,  
so should your spectrum analyzer.



Only Agilent analyzers give you benchtop performance in a lightweight MIL-PRF 28800F Class 2-compliant handheld. Including a rugged design with no fans and no vents for tough field environments. So even in worst-case conditions, you can perform at your peak.

That's thinking ahead. That's Agilent.

#### Handheld Spectrum Analyzers (HSA)

| Key Specs           | N9344C              | N9343C              | N9342C              | N9340B              |
|---------------------|---------------------|---------------------|---------------------|---------------------|
| Frequency           | 1 MHz - 20 GHz      | 1 MHz - 13.6 GHz    | 100 kHz - 7 GHz     | 100 kHz - 3 GHz     |
| DANL                | -155 dBm/Hz         | -155 dBm/Hz         | -164 dBm/Hz         | -164 dBm/Hz         |
| Sweep time          | < 0.9 s             | < 0.7 s             | < 0.4 s             | < 0.1 s             |
| Weight with battery | 3.6 kg<br>(7.9 lbs) | 3.6 kg<br>(7.9 lbs) | 3.6 kg<br>(7.9 lbs) | 3.5 kg<br>(7.7 lbs) |

Agilent and our  
Distributor Network  
Right Instrument.  
Right Expertise.  
Delivered Right Now.

Buy from an  
Authorized Distributor  
[www.agilent.com/find/distributors](http://www.agilent.com/find/distributors)

View online HSA video demos  
Download demonstration guides  
[www.agilent.com/find/HSArugged](http://www.agilent.com/find/HSArugged)

© 2011 Agilent Technologies, Inc.



Agilent Technologies

World Radio History

# 2011

# NABSHOW™

This year's NAB Show was a very fast four days. The overall positive mood seemed to make the event go by much quicker. Attendance was up, exhibitors were happy, the sessions were full. In short, it was a good convention.

With the looming CAP changes, EAS was an obvious hot topic. Likewise IP anything (routing, audio, control, messaging, you name it) was a common underlying theme. HD Radio, while not in the main spotlight, had some shining moments as well.

Underlying themes related to identifying new revenue streams and ways to interact with listeners. As the media universe continues to grow and further splinter the radio listening audience, stations are finding new ways to reach listeners and preserve their revenue streams. Crowdsourcing and data services are just two of those methods.

What follows is a synopsis of the convention in new products shown on the floor and highlights of our daily photo blog. The *Radio* magazine Pick Hits, a tradition since 1985, are included. And be sure to watch the Pick Hits videocasts for the winners. Links are posted at RadioMagOnline.com.

*Chris Scherer*

—Chris Scherer, editor

## IP transmitting system WorldCast Systems

**APT SmartIP with SureStream:** Part of the SmartIP suite of IP techniques and features, APT SureStream enables delivery of broadcast-grade audio quality over cost-effective, public ADSL or wireless links. SureStream uses inexpensive IP links such as wireless 3G and 4G IP networks, LAN, WAN, Wi-Fi and simple ADSL. A combination of these can be used for increased redundancy. SureStream does not alter the audio to ensure continuity of service, nor does it switch between links depending upon performance, but rather it uses resequencing technology to seamlessly stream high-quality audio.

305-249-3170 • [www.aptsystems.com](http://www.aptsystems.com)  
[sales@worldcastsystems.com](mailto:sales@worldcastsystems.com)

### What the judges had to say:

Two separate, diverse connections allow robust backup.

Physical diversity and router diversity are key.

## 2011 PICK HIT Radio

THE RADIO TECHNOLOGY LEADER

### SNMP-controlled RF switch

#### ERI-Electronics Research

**Smart Switch:** Developed in a partnership with Broadcast Devices, Smart Switch is an update for the ERI line of motorized switches. The Smart Switch allows an Ethernet cable connection for control and status when connecting an ERI switch to an ERI ACS-100 switch controller and the PWR-100D power sensor and directional coupler. This allows for complete SNMP connectivity between this family of ERI/BDI products for monitoring and protection of RF systems for a simpler and cleaner installation versus the traditional methods that use multiple wires and significant installation labor. The system adds RF sensing to prevent the switch from moving while RF power is applied.

918-975-6000 • [www.eriinc.com](http://www.eriinc.com)  
[sales@eriinc.com](mailto:sales@eriinc.com)

### What the judges had to say:

The RF auto-sensing will prevent many problems.

SNMP and other types of control are well-suited for modern control systems.

# SELL MORE ADS OPTIMIZE PROFITABILITY

“*We’ve seen definite improvements in our sales organization and increases in revenue with WideOrbit. Our salespeople have more accurate information so they’re selling more ads. And WideOrbit has provided me with ultimate control to effectively manage my stations to optimal profitability.*”

— ABRAHAM ZAVALA CHOCANO  
General Manager, Corporación Radial del Peru

**End-to-End Solutions**  
for Managing Your  
Radio Business



THE WORLD'S LARGEST PROVIDER  
OF ADVERTISING SALES, TRAFFIC,  
AUTOMATION & BILLING SOLUTIONS

FOR MORE INFORMATION OR TO SCHEDULE A DEMO GO TO: [WWW.WIDEORBIT.COM/RADIO](http://WWW.WIDEORBIT.COM/RADIO)

Questions? Contact: Mike Zinsmeister, VP Sales | Office: +1.828.252.8891 | Mobile: +1.828.712.2845 | [mikez@wideorbit.com](mailto:mikez@wideorbit.com)



**High-intensity LED strobe Dialight**

**Vigilant L-856:** This high-intensity system consists of three flash heads, three power supplies per level and one controller for the entire system. Up to 18 synchronized flash heads can be used on a tower. The three flash heads provide 360 degree coverage. The working voltage is less than 200Vdc, which is significantly less than traditional Xenon flashtubes. The units are sealed for protection from the elements. Patented optics provide sharp cutoff to minimize light pollution and ground scatter.

800-545-2870 • [www.dialight.com](http://www.dialight.com)  
[info@dialight.com](mailto:info@dialight.com)

**What the judges had to say:**

No more long delays to send an alert to multiple streams.

This is a long-needed accessory for EAS.

**AXIP console Axia Audio**

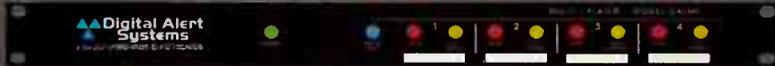
**Radius:** A compact networked mixing console with four stereo buses, eight faders, 16 audio I/O ports and an Ethernet switch with Gigabit. Radius features automatic mix-minus for every fader. Other features include: talkback, networkable, four GPIO machine-control ports, four instant-recall Show Profile snapshots, record mode with one-touch recording, monitor controls for an adjacent studio, fan-free mixing engine and desktop mount. Additionally Radius has switchable VU/PPM LED bar graph meters, 100mm conductive plastic faders, aircraft-quality switches with LED lighting, onboard NTP-capable clock, event timer and high-resolution OLED readouts on each fader strip.

214-311-7225 • [www.axiaaudio.com](http://www.axiaaudio.com) • [info@axiaaudio.com](mailto:info@axiaaudio.com)

**What the judges had to say:**  
 An entry-level surface ideal for dub and voice-tracking booths.  
 Small size with lots of features.

**Audio switcher Digital Alert Systems**

**MultiPlayer:** MultiPlayer eliminates the restrictions of sharing a single Emergency Alert Systems (EAS) encoder/decoder system with relays and switches by provid-



ing multiple and completely independent EAS switching, playout and control to simultaneously cover the EAS requirements of multiple program streams. MultiPlayer is configurable for analog or AES switching of up to four program streams and networks to any DASDEC system for management and logging. In addition, the integrated switching and multiple GPI/Os for each channel makes facility integration easy.

885-765-2254 • [www.digitalalertsystems.com](http://www.digitalalertsystems.com)  
[info@digitalalertsystems.com](mailto:info@digitalalertsystems.com)

**What the judges had to say:**  
 A cost-effective alternative to flash tubes.  
 I've been asking for an LED beacon like this for years.

**iPhone microphone adapter Tieline Technology**

**Mic Adapter:** When newsgathering using ReportIT Live on an iPhone4, attach pro dynamic microphones with Mic Adapter. The adapter features a professional XLR mic input and dual headphone outputs for live interviews between the remote site and the studio. It also has adjustable mic gain attenuation, automatic gain control on/off, a

stereo line level input and is self-powered using two AAA batteries. Importantly, the Mic Adapter also features a mini-USB power input for iPhone charging during long broadcasts. The adapter can also be used for a variety of other iPhone Pro Audio apps. It is currently going through the Apple Accessory Certification process and the company expects it to be shipping before mid-year.

**What the judges had to say:**  
 The design is great. It doesn't block the camera.  
 It's an easy way to add your mic of choice to an iPhone.



888-211-6989 • [www.tieline.com](http://www.tieline.com)  
[sales@tieline.com](mailto:sales@tieline.com)

# Simplicity Made Smarter



## *Pilot* LOGITEK DIGITAL CONSOLE

Less than a decade ago building infrastructure at even the most modest radio facility was difficult and costly. Today, AoIP is making it possible to replace miles of cables and closed systems with routers that use standardized network protocols. The **JetStream Mini** brings you the benefits of this new technology, and nothing is easier to use, faster, or less expensive. Add a **Pilot** control surface that includes the basic operating features your staff will need and you have the most cost effective AoIP networked audio system available.

The Pilot is easy on the eye and the budget and like the JetStream Mini, Logitek has built it with ease of use and durability in mind. The Pilot is a tabletop control surface that includes all of the basic engineering features your staff will need- and more- including 4 Program busses, 3 monitor sections and 24 mix minus busses. It is available in frame sizes for 6 to 24 faders.



JetStream MINI IP Audio Networking System

Looking for lots of power in a small footprint? The JetStream Mini lets you load up to 64 channels of I/O into a 2 rack unit and the Pilot will service even the most constrained spaces with ease. Configure your system with microphone inputs and analog/digital I/O to suit your specific needs, our use of standardized IP protocols ensures advanced AoIP networking with fast and easy setup... all for a price that won't break the bank.



**Digital telephone hybrids**

**Telco Systems**

**Hx1, Hx2:** The single-hybrid Hx1 and dual-hybrid Hx2 are packed with new features. Symmetrical wide-range AGC and noise gate from Omnia automatically manages levels and EQ. Built-in auto-answer, caller disconnect detection, audio leveling and anti-feedback routines

**What the judges had to say:**

Built-in processing for incoming and outgoing audio.

I have heard it make cell phones sound really good.



for enhanced two-speaker applications, call screening and line hold features, front-panel send, receive audio metering and an internal universal power supply are all standard on Hx hybrids. Other features include advanced PCTS hybrid algorithms, digital dynamic EQ and adjustable smart leveler, separate EQ high and low display meters, high-contrast icon display of line status and front-panel hold button.

818-241-7225; [www.telco-systems.com](http://www.telco-systems.com)  
[info@telco-systems.com](mailto:info@telco-systems.com)

**HD Radio monitor**

**Inovonics**

**INOmni 632:** The INOmni 632 combines all the features of a professional grade HD Radio monitor/receiver with important diagnostic and troubleshooting tools for analog FM and IBOC FM stations. Along with essential alarms, AES digital output and balanced analog outs, the INOmni 632 is the first scalable HD Radio monitoring system, and the first Inovonics product to offer a "no blend" mode, meaning the receiver will not fall back to analog if the digital signal is lost.

**What the judges had to say:**

Substantial RBDS and HD Radio data decoding.

It stays locked on the HD Radio signal at all times.



It can decode HD Radio multicasts up to HD8 streams and displays PSD, RDS and RT+ tagging data. Front-panel alarms for carrier loss, digital program loss and audio loss are also available on the rear panel as tally outputs.

800-733-0552; [www.inovonics.com](http://www.inovonics.com)  
[info@inovonics.com](mailto:info@inovonics.com)

**Video IP camera**

**Comrex**

**LiveShot:** Weighing in at less than five pounds, the compact LiveShot will attach to a professional camera's battery mount and will get on the air with live, real-time, low-latency video and audio optimized to perform well on challenging 3G/4G cellular and satellite IP data networks. LiveShot also accommodates Wi-Fi and wired IP data connections and offers a store-and-forward feature that will capture, manage and send higher-resolution video to an FTP server when a live shot is done. Video return, integrated FB, Wi-Fi and Bluetooth interface are just a few of the additional features. The codec can be controlled and configured locally or remotely via the Comrex LiveShot Central server.

**What the judges had to say:**

Radio is using video more and more.

This is an easy way to get live video during an event.



800-337-1776; [www.comrex.com](http://www.comrex.com); [live@comrex.com](mailto:live@comrex.com)

**IP audio encoder/decoder**

**WorldCast Systems**

**APT Stream In/Stream Out Silver:** Stream-In Silver is an IP audio encoder features a large range of algorithms including Enhanced Apt-X, MPEG 4 AAC-HE and linear audio. The unit is 1/2 x 1RU unit which is fully compatible with all other APT and N/ACIP-compliant codecs. The Stream-Out Silver IP audio decoder offers headphone monitoring, audio backup courtesy of either an on-board USB port or ShoutCast server, embedded auxiliary data and auto-detection of an incoming IP stream. Incorporating Audematis ScriptEasy software, the unit can also be utilized for remote control of other units at a remote site using TCP/IP.

805-249-3110; [www.aptcodics.com](http://www.aptcodics.com)  
[info@worldcastsystems.com](mailto:info@worldcastsystems.com)

**What the judges had to say:**

The external hard drive makes this an ideal back-up audio source.

Providing multiple codecs makes it very flexible.

# WHERE GREAT RADIO BEGINS

## The new Harris® Flexiva™ FM Transmitter

The Harris® Flexiva™ FM solid-state transmitter family provides today's broadcaster with a transmitter platform capable of analog and digital operation. Incorporating field-proven Harris technology, the Flexiva family of products delivers world-class performance, reliability and quality.

Flexiva is designed for low- and high-power requirements, up to 20 kW, while utilizing the most compact design on the market today. Flexiva continues the legacy of the highly successful line of Harris FM transmitters and combines innovative, new Quad-mode RF amplification and software-defined exciter technology to take FM transmission to the next level.

Featuring Harris PowerSmart® technology in its transmitter architecture, the Flexiva line offers unmatched efficiency that makes it ideal for all FM applications and delivers a dramatic increase in power density, lower operating costs, servicability and reduced cost of ownership over the life of the transmitter.



Learn more at [www.broadcast.harris.com](http://www.broadcast.harris.com) or (800) 622-0022.

[harris.com](http://harris.com)

**HARRIS**  
assuredcommunications

**Aluminum transmission line**  
**ERI-Electronics Research**

**1329Line:** These aluminum outer/copper inner conductor rigid transmission line systems are available in 3 1/4", 4 1/4", and 6 1/4" (both 50 and 75 ohm) sizes. The elimination of the copper outer conductor reduces component prices and weight, decreasing the support component complexity, cost and installation effort. ERI's bellows expansion compensator accommodates the differential expansion between the inner and vertical and horizontal spring hangers are designed to support the system and compensate for differential expansion between the tower and vertical and horizontal runs. The systems also include galvanic adapters to allow interconnection to new or existing brass and copper components.



812-845-6000, [www.eriinc.com](http://www.eriinc.com)  
[sales@eriinc.com](mailto:sales@eriinc.com)

**What the judges had to say:**

Much lighter weight is ideal for tower loading issues.

There's a built-in theft deterrent because it doesn't look like copper.

**Audio processor**  
**Omnia Audio**

**Omnia.9:** Omnia.9 features separate processing cores for FM and HD-1 and (optional) HD-2 and HD-3. It also supports encoding to MP3 (Mpeg-1 Layer 3), MP2 (Mpeg-1 Layer 2), AAC, HE-AAC (including RTSP/3G for streaming to mobile phones), Ogg Vorbis and WMA Pro formats. A 7" touchscreen front panel, full remote control, on-screen keyboard, dynamically updatable RDS encoder, selectable SSB (Single Sideband) stereo encoder, and adjustable dynamic bass clipping are



part of the toolkit. HTTP push support for automation, such as dynamic RDS and streaming song titles, is also standard, as well as scheduled processing preset selection by depart. Omnia.9 also has dual, independent power supplies and native Livewire network connectivity in a 2RU package.

216-241-3543, [www.omniaaudio.com](http://www.omniaaudio.com)  
[info@omniaaudio.com](mailto:info@omniaaudio.com)

**What the judges had to say:**

The unclipped is amazing.

The remote control and monitoring capabilities are also well done.

**Advanced FM transmitter**  
**Harris**

**Flexiva:** This VHF FM solid-state transmitter provides radio broadcasters with a single platform to support analog and global digital standards. Quad-mode operation supports FM, FM+HD Radio, HD Radio-only or DRM+ digital broadcasting, while the transmitter incorporates Harris Real-Time Adaptive Correction (RTAC) technology to optimize power and minimize adjacent-channel interference. Flexiva transmitters are built on the legacy of Harris radio broadcast transmitters, including the ZX Series and its efficient power supply, cooling and control designs. Available in power levels up to 20kW, Flexiva transmitters also leverage Harris PowerSmart technology to create a compact, cost-efficient transmission solution with high power density and low operating costs.



800-622-9622, [www.in.comcast.harris.com](http://www.in.comcast.harris.com)  
[lincoln1@harris.com](mailto:lincoln1@harris.com)

**What the judges had to say:**

Amazingly small footprint.

Great redundancy as well.

**IP phone callflow system**  
**Comrex**

**STAC VIP:** STAC VIP takes advantage of advances in VoIP and SIP-based technologies that allow for high-quality voice calls to be made from IP-based PBX systems, Smartphones, PCs and through popular VoIP providers. It provides a way to manage not only traditional POTS calls, but also VoIP and SIP calls from Smartphone apps (like Comrex ARC) "soft codecs" and even Skype.



800-237-1726, [www.comrex.com](http://www.comrex.com)  
[info@comrex.com](mailto:info@comrex.com)

**What the judges had to say:**

Adding additional services, such as Skype, is the right step forward.

Separately the smartphone app is perfect for station branding.



**More Online:**  
**Watch the Pick Hits Videocasts at RadioMagOnline.com.**

A L W A Y S F I R S T



# MusicMaster

## SCHEDULING

### **Nexus Server**

Connecting with applications, devices  
and services

### **iNexus App**

Remote control MusicMaster from your  
iPad or iPhone

### **Dashboard**

Multi-station vital signs monitor

### **MM Live Server**

Audience song choice with total  
format control

### **NexPlay**

Fully integrated digital audio player

### **Research Master**

Listen to your listeners and see  
real time results

**COMING SOON: MusicMaster Version 5.0**

## MusicMaster Is Your Powerful New Hub for Digital Connectivity

SAVE TIME. SOUND BETTER. BUILD A BIGGER AUDIENCE WITH CONNECTED TECHNOLOGY. **IT WILL BLOW YOUR MIND.**

Call 651.405.9119 or visit [www.musicmaster.com](http://www.musicmaster.com)

**Transmitter site audio playback****Nautel**

**Push Radio:** Designed for managing audio content to a remote site. Building on the local audio transmitters and leveraging the Internet distribution to send audio to the transmitter, which then plays the system will be expanded to logs back to the station. A switching audio inputs, playlists, settings based on time and date editor provides drag-and-drop Inside audio processor provides



VS Series transmitters. Push Radio

trials operations at the transmitter storage capabilities of Nautel VS AUI control system. Push Radio uses files and playlists to the content locally. send the as-played scheduler automates processor or other rules, while a playlist editing. The Urban the audio playback.

**What the judges had to say:**

This provides a full N+1 backup option.

It's a rudimentary player, but it offers so much practicality.

## Pick Hits Judges

**Bud Aiello**

Director of Engineering Technology, NPR  
Washington

**Roswell Clark, CSRE CBNT, MCSE**

DTO Tampa/Orlando, Cox Media Group  
Tampa, FL

**Bill Croghan, CPBE**

Chief Engineer, Lotus Broadcasting  
Las Vegas

**Rick Kemp**

Chief Engineer, Journal Broadcast Group  
Boise, ID

**Jim Leifer, CPBE**

Director of Engineering, Clear Channel  
Miami

**Norman Philips, CBNT**

VP Engineering, Townsquare Media  
Dallas

**Paul Shulins, CPBE**

Director of Technical Operations,  
Greater Media Boston  
Boston

**Martin Stabbert, CPBE**

Director of Corporate Engineering,  
Citadel Broadcasting  
Reno, NV

**Barry Thomas, CPBE CBNT**

VP/Engineering, LFMC  
Atlanta

**Mike Tosch, CSRE CBNT**

Chief Engineer, ESPN Radio LA  
Los Angeles

## 2011 NAB Show Pick Hits Rules

1. Products must be new and not shown at a previous NAB spring convention. In some cases, distinguishing a new product from a modified older one is difficult. For "Pick Hits" purposes, a new product is one with a new model number or designation. Software, firmware and operating system updates are eligible, but the new revision must carry an obvious designation (1.0 to 2.0 for example) and the feature set must provide clearly identifiable changes or updates.
2. Products must have some positive impact on the intended user's everyday work. Judges search for equipment intended for use on a regular basis. Products should provide new solutions to common problems.
3. Products must offer substantial improvement over previous technology. Unique circuit architecture need not be included, but some new approach or application must be involved in the product's design.
4. The price of the product must be within reach of its intended users. The judges seek products appropriate to a wide range of facilities.
5. The products must be available for purchase within the 2011 calendar year. Equipment must be on display on the show floor, currently (or imminently) in production, and some type of product literature must be available. Judges take the exhibitor's word on availability dates. Products demonstrated in private showings do not qualify.
6. The Pick Hits judges operate independently from one another and remain anonymous to everyone including other judges until the selection meeting. This ensures that the products chosen are truly representative of the industry, that the judges were not persuaded in any way, and that the entire selection process is as fair as possible. The judge's identities are published in the June 2011 issue.
7. The editorial staff of Radio magazine serves only as a moderator during the final selection process and has no influence or decision in determining the winners.

## THE ALL NEW GUEST MODULE™ GM2X6 TALK SHOW CONTROL SURFACE



SIMPLE ON THE OUTSIDE, POWERFUL ON THE INSIDE

# SIMPOWERFUL

Introducing a modular family of talk show system components, JK Audio presents a powerful, easy-to-use system that your staff will love. With operation so simple your entire crew can learn its features without even cracking open the user guide.

The heart of the system is the new Concierge™ 2x6 Switch Core, which routes six incoming phone lines to the JK Audio innkeeper 1rx or innkeeper 2 Digital Hybrids. Concierge adds hold audio input, auxiliary phone integration, and intuitive call control.

Up to eight Guest Module control surfaces can be added to provide remote control over CAT5 cable. Guest Modules are hot swappable without losing calls, and are available in GM1x6, GM2x6, and GM1x12 desktop and rack mount models.



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

TOLL FREE: 800.552.8346 TEL: 815.786.2929 [www.jkaudio.com](http://www.jkaudio.com)

**JK Audio**

by Erin Shipps, senior associate editor



### iPhone audio interface

#### Fostex

**AR-4i:** AR-4i is an audio interface for iPhone4 dock connector. The high quality stereo microphone inputs with A/D converter improve the audio quality of iPhone4's video recording, video streaming via Ustream, LiveStream and other services as well as recording of live performance and ENG. Main features include: Three microphone inputs with plug-in power for vertical or horizontal use (input level control and EQ can be done using the dedicated app); 2x cardioid plug-in microphones

come as standard, and third-party microphones can be used; LED level meter for input level monitoring; microphone gain control; headphone jack for input monitoring; and 2x AAA batteries for more than 10 hours operation. External power can be fed via USB. A screw hole is provided for optional camera mounts.

800-7-FOSTEX; [www.fostexinternational.com](http://www.fostexinternational.com); [sales@fostex.com](mailto:sales@fostex.com)

### 35W power amplifiers

#### RDL (Radio Design Labs)

**HD Series:** These ultra high efficiency amplifiers are the first full-featured environmentally conscious "greener" mixer amplifiers for commercial installations. These products include studio quality microphone input stages, line-level transformer isolation, equalization, remote control capability and integral analog compression coupled to sonically pleasing analog-filtered high efficiency Class D output stages. An internal low-power-consumption processor monitors usage demands to completely shut down internal circuitry for maximum power conservation and extremely low long-term operating cost. There are three units with 4 $\Omega$ /8 $\Omega$  outputs and three units with 25V/70V/100V outputs (labeled with an "A" suffix), for a total of six models. The HD prefix stands for Half Dual (half rack width, dual RU height).

800-281-2683; [www.rdl.net](http://www.rdl.net); [sales@rdl.net](mailto:sales@rdl.net)

### Wireless battery monitoring system

#### Staco Energy Products

**FirstLine BMS:** The new wireless FirstLine BMS Battery Monitoring System continuously monitors UPS batteries and provides real-time information, ensuring that batteries are ready when needed. Information is displayed through curves and bar graphs on the FirstLine BMS easy-to-read 6.4" LCD touchscreen monitor. The system measures and records battery cell voltage, battery string voltage, battery string current, battery room temperature, battery cell impedance, as well as battery terminal temperature. Managers can ensure that capacity conditions are continually met as well as the permanent availability of high quality energy. Because it is wireless, the FirstLine BMS easily integrates into existing applications.

937-253-1191; [www.stacoenergy.com](http://www.stacoenergy.com); [sales@stacoenergy.com](mailto:sales@stacoenergy.com)



### Audio processing

#### Blade

#### Wheatstone

**IP-88VE:** Part of the WheatNet-IP Intelligent Network, the IP-88VE occupies a single rack space, but packs an impressive complement of eight fully independent Vorsis Embedded three-band stereo audio processors. Each processing



chain consists of a four-band parametric equalizer followed by a crossover and three bands of compression. The compressors each feed their own limiters, whose outputs are then fed to a broadband lookahead limiter for tight peak control. The Blade has its own local I/O, with eight stereo pairs of AES digital audio in and out, and can function as a standalone processing engine. Because it's a Blade, it can also instantly configure itself as part of a new or existing WheatNet-IP Intelligent Network, making its processing power available throughout that network. The IP-88VE is configured and controlled over Ethernet using a computer.

252-638-7000; [www.wheatstone.com](http://www.wheatstone.com)  
[sales@wheatstone.com](mailto:sales@wheatstone.com)

### Digital hybrids

#### AEQ

**TH-03:** The TH-03 is an advanced digital hybrid that comes in versions for one or two telephone lines, and either analog or AES/EBU digital inputs and outputs. Each model has built-in signal level metering for each hybrid line. Feedback is automatically mitigated by the digital hybrid, and no adjustments or calibration are required. The two-line models include a mix-minus bus for multiplex communication while on-air or on-hold in the studio: Pressing the MPX button automatically establishes a conference between the two telephone lines, so only a single audio feed to and from the hybrid to the mixing console is needed. The TH-03 takes care of simultaneously getting both in-bound calls to the console, and provides audio from the console back to each individual telephone line, with both console audio and the other caller's audio. The TH-03 also has AEQ's built-in frequency extender. When activated, it moves all frequencies 250Hz upward on the send line and 250Hz downward on the receive line. This additional 2.5 octaves results in enhanced bass frequencies.

800-728-0536; [www.aeqbroadcast.com](http://www.aeqbroadcast.com)  
[sales@aeqbroadcast.com](mailto:sales@aeqbroadcast.com)



# Proven

# Consistent

# Reliable



For over 60 years broadcasters have relied on proven MYAT RF solutions. From rigid transmission line systems to filters to switches and combiners, we deliver performance on time, every time. Whether it is basic hardware or full-line integrated engineering solutions, MYAT designs and builds reliability into every product we make. And with our unmatched stock and inventory, we can assist with your immediate requirements and last minute needs.

YES -  
BUT THEY'RE MUCH MORE:  
\* INNOVATIVE  
\* DEDICATED  
\* RESPONSIVE  
CONTACT MYAT WITH  
YOUR PASSIVE RF  
REQUIREMENTS.



FM Splitter/  
Patch Panel



Coaxial Transfer  
Switch



LPFM/IBOC  
Filter 3kW



LPFM/IBOC  
Filter 8kW



FM Constant  
Impedance Combiner



FM Switchless  
Combiner



Learn why so many broadcasters rely on MYAT. • 1-201-684-0100 • [www.myat.com](http://www.myat.com)



**Monitor mounting  
Middle Atlantic Products**

**VisionFrame:** Available in both free-standing and desk mount configurations, VisionFrame systems provide heavy-duty structural support for monitors. These versatile systems save integrators installation time with a simple, effective design that can be specified with the company's Middle Atlantic Designer 3D layout software. VisionFrame systems can be designed with monitor height more than 13' from the floor and with unlimited length.



973-839-1011

[www.middleatlantic.com](http://www.middleatlantic.com)  
[sales@middleatlantic.com](mailto:sales@middleatlantic.com)

**Portable mixer  
Sound Devices**

**MixPre-D:** At the heart of the MixPre-D are two studio-grade mic/line switchable inputs with limiters, high-pass filters and selectable phantom power. To accommodate the increasing variety of cameras and devices used in production today, it has output adaptability and serves as an flexible, class-compliant USB audio interface. The MixPre-D offers numerous analog output options including mic/line switchable balanced XLR, dedicated consumer mic-level on a locking TA3 connector and an aux-level output on 3.5mm connection. Digital outputs include balanced AES3 on XLR and USB audio connectivity.



608-524-0625; [www.sounddevices.com](http://www.sounddevices.com); [info@sounddevices.com](mailto:info@sounddevices.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.

888-665-0501; [www.omt.net](http://www.omt.net); [omt@omt.net](mailto:omt@omt.net)

**Audio analyzer  
NTI Audio**

**Flexus:** The Flexus audio analyzer offers a modular hardware concept, which allows customization for two or four parallel channel operation. The impedance



module supports speaker measurements for obtaining impedance plots and Thiele-Small-parameters. Individual input switcher and output switcher modules extend the audio analyzer to 14 input channels or 14 output channels connected simultaneously. The FX-Control suite operates several FX100 in parallel thus offering cascaded system measurements. For measurement speed optimization, the analyzer acquires all measurement functions in parallel. State-of-the-art measurement technologies comprising of fast glide sweeps, detailed stepped sweeps and a continuous meter mode further support fast and accurate measurements.

503-684-7050; [www.nti-audio.com](http://www.nti-audio.com)  
[info@ntiam.com](mailto:info@ntiam.com)

**Audio loudness meter  
DK Technologies**

**DK Meter:** This compact audio loudness meter is no bigger than an iPhone and is designed to meet increasing demands from the market for cost-effective stereo and 5.1 metering, including loudness. DK1 is for anyone working in stereo, and the DK2 is specifically aimed at the 5.1 surround sound market. The meter is easy to use, easy to install and comes with its own desk-mount. It accepts digital audio inputs and is supplied with all known loudness measurement recommendations, as well as the standard DK-Technologies meter scales.



+45 4485 0255

[www.dk-technologies.com](http://www.dk-technologies.com)  
[info@dk-technologies.com](mailto:info@dk-technologies.com)

# MEET SAM... A COOL WAY TO MONITOR AUDIO LEVELS, BALANCE AND PHASE



When it comes to audio, a quick, accurate and intuitive way to know what's happening is essential for a successful result. That's where SAM comes in.



The **Stereo Audio Monitor (SAM)** is a stereo level and phase meter that incorporates Single Stereo Display\* technology. SAM provides a visual indication of the levels and phase relationships of a stereo audio signal. The unit indicates the usual Left and Right channel levels, and also displays the Sum and Difference components of the stereo signal.

SAM's dual tri-colored Single Stereo Displays show this information in an intuitive and easy-to-comprehend format. Both analog and AES/EBU digital signals can be monitored with SAM. Its compact size allows monitoring three stereo audio sources in only 1 RU of your valuable rack space.

Slip SAM into your audio chain and see what you've been missing.

(\*Patent pending)



**WE BUILD SOLUTIONS.**

**DIGITAL SOLUTIONS. ANALOG SOLUTIONS. FUNCTIONAL. RELIABLE. AFFORDABLE.**



Henry Engineering • 503 Key Vista Drive • Sierra Madre, CA 91024 USA  
T: 626.355.3656 • F: 626.355.0077 • email: [Info@henryeng.com](mailto:Info@henryeng.com)

Visit [www.henryeng.com](http://www.henryeng.com) for all of Henry's solutions!

## Crowdsourcing app Broadcast Electronics

**CrowdControl:** CrowdControl is a set of studio tools for enabling listeners to make real-time decisions on what music is played while at the same time letting them interact with station talent through social networks like Twitter and Facebook. The application is initially offered in two tiers. The first allows radio stations to present voting blocks, so listeners can vote on a particular song to play at a set time. The second tier allows the radio station to run 24/7 under listener control within station parameters. Ideal for HD Radio multicast channels, the second option offers built-in rule and schedule mechanisms to ensure that the station follows acceptable programming guidelines.

217-224-9600; [www.bdcast.com](http://www.bdcast.com)  
bdcast@bdcast.com



## Linear PCM recorder Olympus

**DM-620:** Featuring a three-microphone Trespac system designed to capture low frequency sound for premium recordings, the DM-620 also offers voice guidance for users with assistive needs as well as auto-leveling, scene select, noise cancelation, zoom microphone and low-cut filter. This compact, lightweight recorder features a sleek metal body with uncompressed 16-bit/48kHz linear PCM recording format. The Trespac system employs two condenser stereo mics and a center omni-directional mic capable of capturing lower bass ranges down to 20Hz.

888-553-4448; [www.olympusamerica.com](http://www.olympusamerica.com)



## Acoustic panels Auralex Acoustics

**Elite ProPanels:** These fabric-covered, absorptive panels designed to provide an aesthetic, yet cost-effective alternative to full-blown custom installations. Elite ProPanels are designed to absorb excessive reverberations and diminish other acoustical anomalies, providing a more pleasing and accurate listening environment. The panels feature industry-leading, resin-hardened edges and cover the spectrum in terms of finishes, styles and colors. They feature maximum flame retardancy and meet the Class A fire-rating per ASTM test E84.

317-842-2600; [www.auralex.com](http://www.auralex.com); [auralexinfo@auralex.com](mailto:auralexinfo@auralex.com)

# Monitor Confidently.



## Inovonics 632 HD Radio™ Monitor

*The first scalable solution for confidence in FM & HD Radio™ multicasting.*



EVALUATION UNITS AVAILABLE  
[www.inovonicsbroadcast.com](http://www.inovonicsbroadcast.com)  
1-800-733-0552

© 2011, Inovonics Inc. Immediate delivery and availability upon product certification by iBiquity Digital Corporation.

**Dasdec triple port Ethernet expansion option  
Digital Alert Systems**

**EXP3NICGIG:** The EXP3NICGIG adds three additional 10/100/1Gig Ethernet ports for a total of four independent Ethernet ports in the DASDEC-II emergency messaging platform. The only encoder/decoder with four completely independent and assignable Ethernet ports, the option allows users to easily allocate each port for a different network; a port for external access, a port for different users, and perhaps a firewall for any outside access. The unique benefit is multiple points of access across domains without needing complex bridges or modifying routing tables in existing equipment. To further ease integration each port can be assigned a static IP address, while ports one and two can also be set for Dynamic Host Configuration Protocol (DHCP). With two lamps per port indicating link (green) and activity (amber) it's easy to confirm connection and communications between devices.

**585-765-2254; www.digitolertsystems.com; info@digitolertsystems.com**



**Stereo audio monitor  
Henry Engineering**

**SAM:** A digital/analog stereo level and phase meter, SAM uses single stereo display technology to display both channels of a stereo audio signal using one LED meter. The display utilizes tri-color LEDs, showing the left channel in green, the right channel in red, and both (L+R) channels displayed in yellow. By watching the display, an

observer can easily read the levels of both audio channels, see the balance between the channels, and instantly see if a channel is missing. SAM uses a second single stereo display to show the sum (L+R) and difference (L-R) components of a stereo signal. An observer can instantly see if excessive L-R levels could indicate phase error or a polarity reversal in the audio chain. The meter accepts either an AES/EBU digital input or analog inputs. It accurately indicates system levels over a range of -25 to +3 VU. A headphone jack is provided for aural monitoring.

**626-355-3656; www.henryeng.com; info@henryeng.com**

**How can Shively  
Help You?**

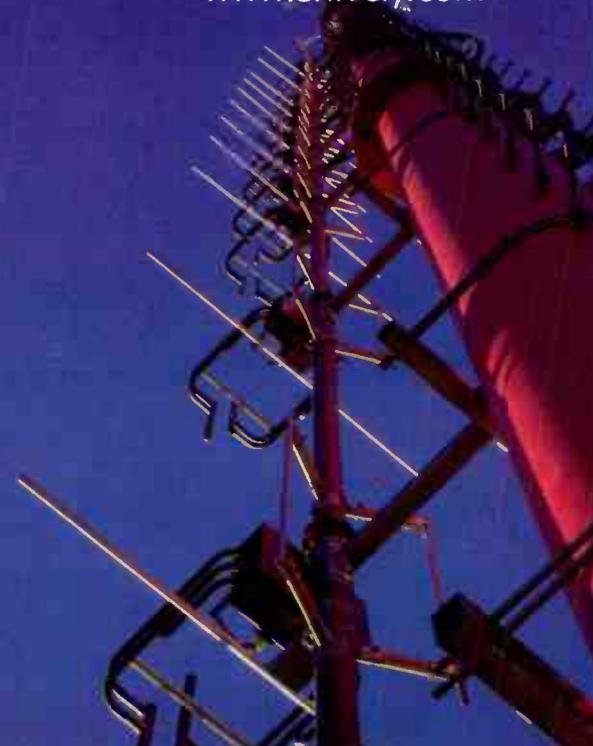
- Pattern Work
- Antennas
- Filters
- Coax



**Shively Labs®**

(888) 744-8359

www.shively.com





**Cables**

**Hosa Technology**

**Pro Microphone Cables:** Combining cable for enhanced signal transmission and audio quality, REAN connectors by Neutrik, and class-leading workmanship, Hosa Pro Microphone Cables feature 20 AWG Oxygen-Free Copper

(OFC) conductors, a 90 percent OFC braided shield, and a beefy, 6.8mm outside diameter (OD) jacket. REAN connectors feature silver-plated contacts, zinc die-cast housing, quadrangle design, chuck-type strain relief, rubber boot kink protection, and a robust locking latch. Standard models come in 3', 5', 10', 25', 50' and 100' lengths and hi-Z models are available in 5', 10' and 25' lengths.

714-522-8878; [www.hosatech.com](http://www.hosatech.com); [lee@hosatech.com](mailto:lee@hosatech.com)

**FM/AM rebroadcast receiver**

**Crown Broadcast**

**CT-1 FM/AM:** This FM/AM receiver can be used with all Crown units up to 600W. It features 50dB quieting sensitivity (mono) of 11.2dBf and 60dB quieting sensitivity (mono) of 17.0dBf. Other features include THD (1kHz mono) of 0.03 percent, stereo separation (1kHz) of 61dB, signal-to-noise of 65dBf (mono) of 79.5dB, and adjacent-channel selectivity of 82dB (noise limited).

800-262-8919; [www.crownbroadcast.com](http://www.crownbroadcast.com); [fmsales@irec1.com](mailto:fmsales@irec1.com)

**Portable broadcast kit**

**PTEK**

**Radio Station in a Box (RIAB):** The Radio Station in a Box (RIAB) contains all the equipment to have a stereo FM radio station up and running in a matter of minutes. This portable system can be used for natural disaster sites or as a back-up for a transmitter site – even in remote locations. The system is pre-wired and ready to go. Simply install the antenna on the highest point of the building, run the coax to the transmitter, hook up the ac power (either local or generator), and it's on the air. Using a laptop as the audio source gives greater flexibility. Programming with the optional radio automation software could not be simpler. Built-in wireless (where available) gives the option of broadcasting any streaming Internet audio source. Or, just put in a CD to play tracks and use the microphone for announcements. System includes: FM broadcast transmitter, BSI Simian Radio automation, desktop mic, 5/8 3dB gain antenna, coax cable with connectors, 220Vac input 50-60Hz, FCC-certified for LPFM, and housed in 4RU shock-proof rack case.

888-889-2958; [www.ptekpower.com](http://www.ptekpower.com)  
[sales@ptekpower.com](mailto:sales@ptekpower.com)

Web Images more

clear crisp bright sound

Search

Results 1 of 1



**OPTIMOD - FM 8600**



OPTIMOD-FM 8600 "The quality of the analog signal is closer than ever to that of digital. Truly a new generation of audio processing."  
 Kevin Scott, Chief Engineer - KSWD Los Angeles

**The new clear starts here.**

Processing that optimizes the sound of your FM channel while punching remarkably crisp, clean, CD-like audio through to your digital channel audience.

The most powerful and effective on-air FM processing system Orban has ever created.



Mid South: Bob Mayben... 1-877-391-2650  
 South Atlantic: Art White... 1-770-632-1295  
 North East: Jim Peck..... 1-315-623-7655  
 Central: Bernie O'Brien.... 1-731-695-1714  
 North Central: Pam Leffler. 1-513-376-8600  
 South West: John Lackness 1-210-775-2725  
 Mid West: Mary Schnelle.. 1-513-899-3036  
 West Coast: Doug Tharp... 1-866-673-9267  
 Pro Audio: Ric Goldstein... 1-877-640-8205  
 Latin America: Lily Massari 1-760-650-1427  
 Bradley Div.: Art Reed.....  
 Bob Eburg..... 1-800-732-7665

**CONTACT SCMS**  
 for ORBAN products

1-800-438-6040  
[www.scmsinc.com](http://www.scmsinc.com)



ARRAKIS SYSTEMS INC.

## Pre-End of the World Sale... 25% off !!!

the Mayan calendar predicts the end of the world in 2012 so  
this sale lasts until December 31st, 2011



as seen here for only \$4,950  
a \$1,650 savings

- Fast delivery & often in Stock
- Hundreds of Configurations
- Fully Custom designs available

buy the 'BEST' for  
a 'Better' price

ACCENT is a contemporary blend of brushed metals, pleasing colors, and interesting textures. The metal structure is artfully integrated into the visible design decor of the cabinetry. Cabinetry and electronic equipment complement each other to create a bold visual environment for talent, guests, and clients alike.

Call us today at 970-461-0730 ext 309 for a free quotation

[www.arrakis-systems.com](http://www.arrakis-systems.com)

**Radio  
EDITOR'S  
PICK  
2011**

**Digital radio  
processor  
DaySequerra**

**Eclipse LBR4:**

This four-stream AES stereo audio processor is specifically designed to improve the audio performance of low-bit-rate HD Radio multicasts, DAB and DRM channels with particular focus on stereo at 24kb/s. The Eclipse features DTS Neural Loudness Measurement technology to provide accurate loudness measurements and newly developed



psychoacoustic processing with look-ahead gain correction to make audio level adjustments that are transparent to listeners. DaySequerra's proprietary Eclipse codec pre-processing engine has been specially tuned for operation at 24kb/s, 32kb/s, 48kb/s and 64kb/s bit rates to significantly reduce artifacts from lossy codecs and low-bit rate transmission.

856-719-9900; [www.daysequerra.com](http://www.daysequerra.com)  
info@daysequerra.com

**Headset microphone  
AKG**



**C 554 L:** This new microphone is ergonomically optimized with a behind-the-neck headband to provide maximum comfort and comes with an external shock mount for high mechanical-noise reduction and a flexible frequency response to ensure optimum audio and intelligibility even in the most noisy of environments. There is a new moisture shield that prevents perspiration from penetrating into the transducer. C 544 L comes with an optimized frequency response for speech and vocals. Other features on the microphone include a mini XLR connector that allows the microphone to work with AKG's B 29 L battery-operated power supply and a MPA III L external phantom power adapter. There is also a variant that conforms with AKG's WMS bodypack transmitters, which employ AKG's smart-battery power and re-chargeable technology for the most efficient use of energy available.

818-920-3212; [www.akg.com](http://www.akg.com); [akgusa@harman.com](mailto:akgusa@harman.com)

**High-Power RF**

*"Nobody does  
it better!"*



**Continental Electronics**

[www.contelec.com](http://www.contelec.com) (214) 381-7161

# OMNIA.11 EVERYTHING YOU HEAR IS TRUE.

- Effortless dial dominance • Louder yes, yet always pure & uncompromised • Pop sparkles • Rock really rocks • Country caresses • Hip hop thunders • Voice is natural and intimate
- Push it hard and be amazed at how open and clean it remains

Find out more: [www.omniaaudio.com](http://www.omniaaudio.com)



©TSL Corp. 2011. All rights reserved.

Radio never sleeps. Neither do we.  
We're here for you, anytime, with free round-the-clock, 24/7 technical support. Call +1-216-622-0247

World Radio History

**CD player/minidisc recorder****Tascam**

**MD-CD1mkIII:** This new model upgrades the digital I/O and the CD player now supports WAV file playback in addition to MP3 files. The MD-CD1mkIII includes a CD player and MiniDisc recorder transport, each of which can be operated independently. Individual inputs and outputs are available for each, plus a "common" output containing both signals. Each transport has both a coaxial and optical S/PDIF output, and the MiniDisc has coax and optical inputs. An optional LA-MC1 balancing kit offers balanced XLR inputs and outputs to the MD-CD1mkIII when required. The MD-CD1mkIII can be controlled through wireless remote, RS-232C or a PS/2 keyboard.

**323-726-0303; [www.tascam.com](http://www.tascam.com); [tascamlit@tascam.com](mailto:tascamlit@tascam.com)**

**Master preamp and input processor****Aphex Systems**

**Channel:** With more and more studios foregoing consoles in favor of recording and mixing in the computer, a clean and versatile frontend input stage is indispensable. The Model 230 has been re-imagined, adding a host of new features to address a greater number of workflows while retaining its sound, functionality and versatility. Channel incorporates seven powerful devices within a compact, single rack space design, including five of Aphex's patented technologies. The front panel is laid out in an intuitive, easy-to-use workflow with easy to understand labeling. Channel features an instrument input, dedicated output and gain reduction metering, front panel sample rate and clock source selection, and a reference quality internal clock.

**818-767-2929; [www.aphex.com](http://www.aphex.com); [sales@aphex.com](mailto:sales@aphex.com)**

**Label printer****Dymo**

**Rhino 6000:** The first printer in the Rhino product family to offer PC connectivity, the Rhino 6000 installer can either create labels before reaching the worksite by downloading files from any Windows-based software program or create or edit labels upon reaching the worksite. The Rhino 6000 also has a library of over 250 easy-to-find industry terms and symbols; and also the ability to save more than 1,000 custom labels, which helps the installer save typing time. Features include a quick-charge lithium-ion rechargeable battery, power-assisted label cutter, and integrated impact bumper that protects against falls while allowing easy access to the label cartridge.

**800-426-7827; [global.dymo.com](http://global.dymo.com)**

**iXm.** The ultimate all-in-one.



Meet the best recording microphone ever. Enjoy an unbelievable sound. Experience a usability you've never seen before.



BGS call 352-622-7700



SCMS call 800-438-6040

**YELLOWTEC**



Why do Axia consoles do phones best?  
(Hint: who's *your* daddy?)



Other consoles treat phones like an afterthought. But Axia's parent company is Telos, so phones are part of our DNA. Consider our Element AoIP console, and the Telos VX broadcast VoIP phone system. Both amazing on their own. But when you connect them – magic. Total integration, so talent can run complex talkshows without taking their hands off the board. Effortless. A dedicated hybrid for each caller, each assigned to its own fader, with automatic mix-minus and talkback. Painless hookup via CAT-5 – no extra I/O or logic connections required. An all-digital path for crystal-clear caller audio, even from cell phones. That's the Telos connection. And only Axia gets it. Axia: the console that talks Telos.



[axiaaudio.com](http://axiaaudio.com)

ARRAKIS SYSTEMS INC.

# THE NEXT GENERATION ANALOG CONSOLE

- analog & digital with USB sound card modules
- Cat5 cabling for today's infrastructure
- Control room & Studio monitors
- 15 channels, 30 inputs
- much more

## MARC-15-15 MODULAR ANALOG CONSOLE

the MARC is a next generation analog console that mixes analog and digital technologies with USB PC sound card modules (on air software included). For today's cable infrastructure the MARC uses CAT5 cabling and RJ45 connectors (cables included). Three stereo buses plus dual conferencing phone hybrid mix minus buses handles the big jobs.

very low  
profile tabletop  
design & fast access  
to level adjustments and cabling

**\$6,499**

conductive plastic  
faders and LED lighted  
switches for reliability.  
Socketed ICs for fast  
on site repair.

CAT 5 cables for all input/output

MARC-15-12 ... \$5,499

[www.arrakis-systems.com](http://www.arrakis-systems.com)

ARRAKIS SYSTEMS INC.

# Digilink-Xtreme Automation

integrates with Arrakis  
ARC consoles

the BEST automation  
in Radio... period !

Unattended Games mode  
Streaming services support  
RDS support

Windows 7  
compatible

- Live On Air w Hot Keys array
- Hard disk Automation
- Satellite Automation
- 16 input stereo switcher
- Phone recorder & editor
- Voice track your shows
- Music scheduling standard

Join the hundreds of others on air with Digilink-Xtreme, the best automation system in Radio. Full featured, it is easy to install, use, and maintain. Best of all, it is easy to buy. Choose from either the no contract \$100 per month 'Solutions Program' or buy 'Xtreme-Complete' outright for only \$6,500.

With the \$100 per month 'Solutions Program,' you receive Xtreme software (On Air, Production, & Scheduling) and "Bridge" hardware PLUS training, support, and upgrades for your ENTIRE radio station. You supply the PCs or we can supply them for you. For less than the cost of a good cell phone contract you can be on air tomorrow with Xtreme, the best automation system in Radio.

With 'Xtreme-Complete' for \$6,500, you purchase a complete system ready for air: DELL business PC, Arrakis 'Bridge', and Xtreme software for on air, production, scheduling, voice tracking and more. The system comes with a full year of the 'Solutions Program' with training, support, upgrades, and next business day 'Bridge' replacement if it should fail. The DELL PC comes with 3 years of next business day, on site service from DELL.

Order your system today and receive it tomorrow, call us at 970-461-0730 ext 309

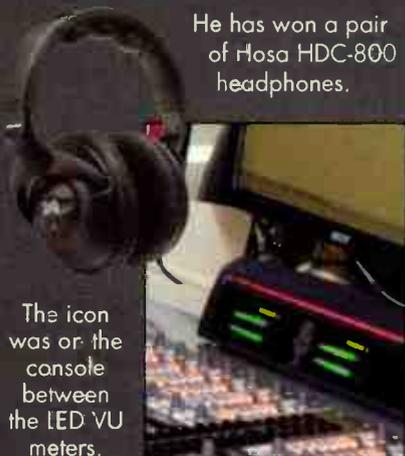
[www.arrakis-systems.com](http://www.arrakis-systems.com)

## Find the mic winner April issue

Congratulations to  
**Bill Hurne**

of WRMB-FM, Boynton Beach, FL  
His name was drawn from the  
correct entries for the April issue.

He has won a pair  
of Hosa HDC-800  
headphones.



The icon  
was on the  
console  
between  
the LED VU  
meters.

[www.hosatech.com](http://www.hosatech.com)

No purchase necessary. For complete  
rules, go to RadioMagOnline.com.

### Monitoring package

#### Genelec

**BroadcastPak:** Composed of five 8030A bi-amplified monitors and a 7050B active subwoofer, the BroadcastPak offers a space-saving 5.1 monitoring solution, ideal for multi-channel editing rooms, mobile recording trucks and other mixing environments where space may be at a premium. The 8030A features MDE (Minimum Diffraction Enclosure) aluminum die-cast enclosure has rounded edges and a gently curved front and sides to achieve a very smooth frequency response and superb imaging qualities with minimized cabinet edge diffraction. The 7050B LSE subwoofer extends the LF response down to 25Hz. This is made possible by Genelec's Laminar Spiral Enclosure (LSE) technology. The subwoofer features a single 8" (205mm) proprietary driver with a 70W power amplifier. It has a frequency response from 25Hz - 85Hz ( $\pm 3\text{dB}$ ), and the ability to deliver short-term sine wave of 100dB SPL in half space at 1 meter.

508-652-0900

[www.genelecusa.com](http://www.genelecusa.com)  
[genelec.usa@genelec.com](mailto:genelec.usa@genelec.com)



## Efficient Transmitters under any condition

The **Barracuda** transmitter series,  
are made to work under any  
condition.

LIQUID COOL  
HANDLES  
HIGH  
TEMPERATURES



*It's not just any transmitter... it's a*

**R.V.R.**  
USA

RVRUSA 7782 NW 46 ST. MIAMI FL, 33166 • T: (305) 471-1180 • F: (305) 471-6979 [www.rvrusa.com](http://www.rvrusa.com) • [sales@rvrusa.com](mailto:sales@rvrusa.com)

# Drops jaws. Not audio.



Broadband Internet is everywhere. Which makes it ideal for live remotes.

Unfortunately, the internet is also notoriously erratic. Even if you're lucky enough to get a good connection, it might deteriorate during your show. So you dial back the bitrate, sacrificing sound quality to play it safe.

There is a better way.

Meet the amazing new Z/IP ONE codec.

Telos and Fraunhofer collaborated to develop a unique coding algorithm that adapts to changing network conditions on-the-fly.

If your connection quality drops, the Z/IP ONE uses error concealment, elastic buffers, and bitrate adjustments to keep audio flowing at maximum quality.

The Z/IP ONE now makes it possible to use the internet for great sounding remotes.

The convenience of the Internet. The sound of Telos.

*Telos*  
AUDIO | NETWORKS  
[www.telos-systems.com](http://www.telos-systems.com)

© 2010 Telos. Z/IP ONE and Z/IP ONE are trademarks of TLS Corp.

## BROADCAST TELEPHONY



Telos is the trusted World Leader in single-line hybrids and multi-line phone systems.

## ZEPHYR IP & ISDN CODECS



With more than 20,000 in daily use around the world, Zephyr is The Best Way to Hear from Everywhere.

## STREAMING AUDIO



Hardware and software products for processing, encoding and streaming your audio content.

## AUDIO LOGGING



PC Software for archiving and logging all of your stations audio.

## NEW PRODUCTS

DIGITAL ALERT SYSTEMS  
FAST LANE TO EAS/CAP COMPLIANCE



### Stuck without a true EAS and CAP solution? Get in the fast lane with Digital Alert Systems.

Only Digital Alert Systems gives you....

- Full EAS/CAP compliance at the lowest cost-per-stream available
- Complete, integrated and fully compliant EAS/CAP units starting at just \$1995
- Available internal AM/FM/WX receivers
- Customized solutions fit current and future station layouts
- More serial, USB, and Ethernet (IP) ports for interfacing options
- Full web-browser operation with multiple simultaneous access and tiered security.
- Avoid collisions with sophisticated automation interfaces to prevent commercial step-ons

 **Digital Alert Systems** [www.digitalalertsystems.com](http://www.digitalalertsystems.com)  
585-765-1155



### Condenser microphone Shure

**KSM42:** This side-address cardioid condenser microphone is for vocal recording. With a tailored frequency response and extensive internal and external pop filtering, the single-pattern, dual-diaphragm design exhibits an ultra-wide dynamic range and exceptionally smooth proximity control for studio applications. A highly consistent cardioid polar pattern creates a broad sweet spot and natural off-axis response. Its dual-diaphragm design features an active-front, ultra-thin, 2.5 micron, 24-karat gold, low-mass, 1" mylar diaphragm.



800-25-SHURE; [www.shure.com](http://www.shure.com)  
[sales@shure.com](mailto:sales@shure.com)

### Sound-isolation rooms Wenger

**Soundlok:** Featuring a refined design, greater sound isolation and other improvements customers have asked for, Soundlok isolation rooms offer a clean, attractive look with closure panels for a seamless installation. And each room is relocatable - so you can move it down the hall or across town as your facility needs change.

800-733-0393  
[www.wengercorp.com](http://www.wengercorp.com)

### iPhone remote control app MusicMaster

**iNexus:** Allowing remote access via a smartphone, the iNexus app works in conjunction with the Nexus Server to give a private connection to the MusicMaster library and schedule histories. Review the logs, swap, move, or replace songs, do a library search by category, title, or artists, and even review histories on the quarter-hour history graphs. Do it all from an iPhone or iPad.

800-326-2609; [www.mmwin.com](http://www.mmwin.com)  
[info@mmwin.com](mailto:info@mmwin.com)

## Acoustics First®

Materials to Control Sound  
and Eliminate Noise™



Absorbers, Diffusers, Barriers and Vibration Control Materials

Toll Free

1-888-765-2900

Web: <http://www.acousticsfirst.com>

NEW

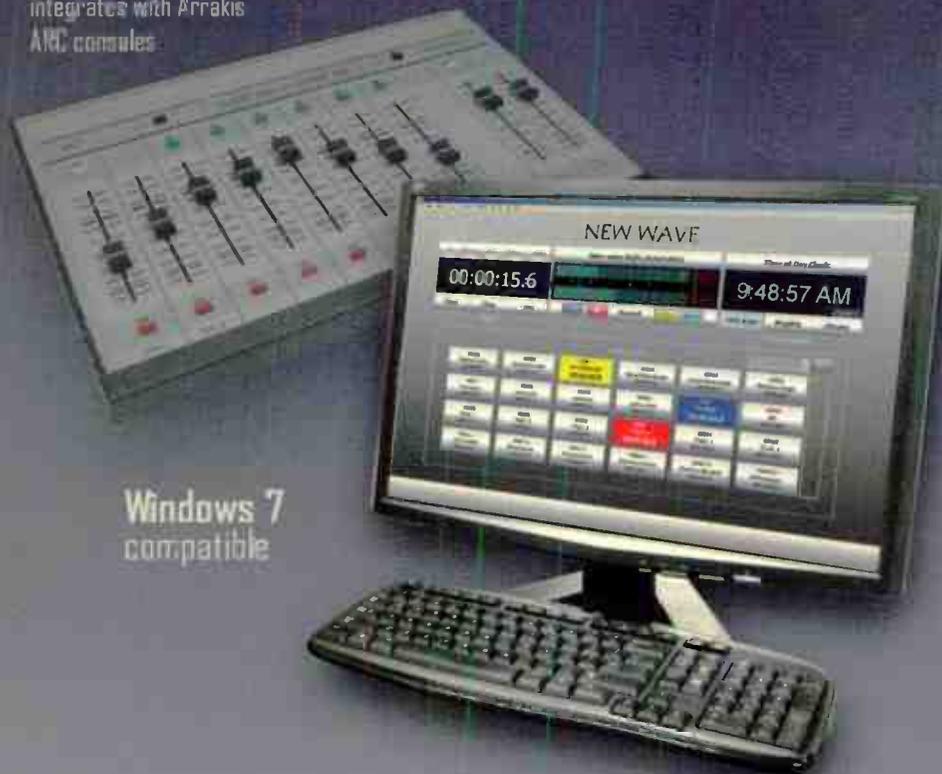
ARRAKIS SYSTEMS INC.

NEW

# NEW~WAVE Automation

integrates with Arrakis  
ARC consoles

the BEST automation  
in Radio... period !



Windows 7  
compatible

Introductory Sale

**\$750**

~~\$1,000~~ instep

Perfect for Broadcast & Internet  
 3 play... On Air Live, Automate, & Cue  
 Simultaneous Recording for Production  
 Voice track recording for perfect Automation

Powerful Music scheduling  
 Supports Traffic & Music imports  
 RDS and Streaming service interface  
 Easy to learn and use & Autofills empty hours

NEW~WAVE is a Windows PC based software solution for today's and tomorrow's professional radio applications. It is designed specifically for playing audio files from hard disk, internet streams, FTP stored audio files, MP3 players, smart phones, text to speech, and much more. NEW~WAVE brings together all of the newest technologies to produce an exciting show for your radio audience. Play live broadcasts, automated broadcasts, podcasts, and stream for internet radio... all at the same time. Most important, NEW~WAVE is quick to learn and easy to use. Designed for both novice and professional alike, it has the simplicity required to get to air quickly and yet the sophisticated features for advanced users. Highly fault tolerant, NEW~WAVE will not allow dead air in automation. Also, if connected to an Arrakis 'Advanced Radio Console' (ARC series), the console and software merge to complete a powerfully integrated radio workstation. NEW~WAVE supports the Windows 7 operating system.

Order your system today, call us at 970-461-0730 ext 309

[www.arrakis-systems.com](http://www.arrakis-systems.com)

## We're Ready For CAP (so you can be, too)

SAGE DIGITAL ENDEC



Questions?  
Call us:  
914-872-4069

Get ready to add CAP to your Emergency Alert System capabilities:

- AES/EBU Digital Audio
- LAN/Internet connectivity
- Web browser based control and monitoring
- More logging, emailing, and remote control options
- Free downloadable upgrade to final version of CAP 1.2

The Digital ENDEC is a drop-in replacement for the classic ENDEC, but new users love it too.

The Sage Digital ENDEC - your one-box solution for CAP and EAS.

Sage Alerting Systems, Inc  
800 Westchester Avenue, Suite 641N, Rye Brook, NY 10573  
Phone 914 872 4069 info@sagealertingsystems.com  
www.sagealertingsystems.com

SAGE

# MAKE WAVES

## EXPECT MORE FROM YOUR AM TRANSMITTER



MADE IN USA

### Presenting the Armstrong Transmitter X-1000B

Bring major market sound to your radio station with the dual, hot-swappable 600 Watt RF modules capable of 150% modulation in Armstrong Transmitter's X-1000B, (1KW HD & DRM ready AM transmitter).

Engineered with the latest technology advances, X-1000B offers high reliability and built-in redundancy. Get ready to save money while improving your sound and reliability. Call us today!



Tel 315-673-1269 ▲ sales@armstrongtx.com ▲ www.armstrongtx.com

### Automation interface Enco Systems

**Presenter II:** Presenter supports all forms of audio technologies including IP audio, traditional sound cards, audio router control, console interfaces, and general purpose I/O, touchscreens, etc. The interface features a panel design with many user selectable tools including voice tracking, hot buttons, recording, database, search and more. Other features include cut, paste and block move of playlists elements, user tabs, backsell log and a number of new and refined user friendly tools designed for live assist and voice tracked operations. New features for version two include: live mode, dual screens, smarter voice tracking, and integration with live list including manual mode for seamless I/O or full auto mode.

800-362-6797; [www.enco.com](http://www.enco.com)  
sales@enco.com

### Network sound card AudioScience

**ASI6685 Livewire:** The ASI6685 professional PCI and PCIe sound card is designed for use in Axia Livewire IP-audio based radio broadcast automation systems. It uses the Axia Livewire protocol to record and play audio streams over a standard Ethernet network. Providing eight play streams mixed to eight stereo outputs and eight record streams fed from eight stereo inputs, the ASI6685 features the AudioScience "anything to anywhere" mixing and routing. A choice of uncompressed PCM, MPEG Layer 2, and MP3 is available for both recording and playback. All compression is handled by an on-board floating point DSP, allowing the host computer to focus on other tasks. DSP-based functionality includes MRX multi-rate mixing technology that allows streams of different sample rates and formats to be mixed digitally. TSX time scaling allows compression/expansion of any or all playback streams in real time with no change in pitch.

302-324-5333

[www.audioscience.com](http://www.audioscience.com)  
sales@audioscience.com

## High-power, high-efficacy lamps Ledtronics



**PAR Series:** Operating either in 120Vac dimmable or in a wide-voltage input range of 90-290Vac, the line of Edison medium screw-base and GU24 bi-pin base bulbs come in various PAR20, PAR30 and PAR38 styles. With

energy consumption ranging from 7W (PAR20) through 12W (PAR30) and up to 15W (PAR38), the lamps directly replace incandescent and halogen lamps that consume up to 100W, and even compact fluorescent bulbs up to 26W, resulting in tremendous energy savings. These state-of-the-art PAR lamps boast 20 percent higher efficacy than the previous generation of LEDtronics PAR lamps. All of the 120Vac dimmable PAR lamps are UL listed.

800-579-4875; [www.ledtronics.com](http://www.ledtronics.com)  
webmaster@ledtronics.com

## Automation RCS

**Zetta 2.0.1:** Zetta's new design has been simplified, streamlined and set up so that new users get more out of the system. New features include: Flexible layout enhancements - granularity controls how much or how little of the application a user can see and customize based on user experience and trust level; stronger user rights - dramatically increase the depth and methods of assigning rights, which end up giving more power to the administrator but also makes the system easier to use for new users; status feed API - the Zetta Status API provides a view into the system's overall health from anywhere. The API is available for anyone to write Zetta system monitoring into another infrastructure. Monitor health and activity of the Zetta system from a Web browser, anytime, anywhere, live.

914-428-4600; [www.rcsworks.com](http://www.rcsworks.com); [info@rcsworks.com](mailto:info@rcsworks.com)

## RF spectrum analyzer Kaltman Creations

**Invisible Waves X:** Highlighting the array of new features in Invisible Waves X are: UFO Alert (Unidentified Frequency Objects) to warn of rogue interference, Click to Listen (listen-in to all RF space) and RF Coordinator to identify usable open RF space. Also included are RF



Congestion Scale to gauge the severity of local RF and RF Level Alert to warn when any cataloged signals fall below assigned thresholds. Other new features are an RF Event/Alarm Recorder and Logger, and insta-save and recall custom profiles and screen images. At the core of the IWVX is an RF spectrum analyzer. When an interesting waveform (transmission) is detected, use the Click to Listen function to aid in identifying the signal; then custom name and catalog the signal into the Master Status Display for continued monitoring including an RF Level Alert. And use the RF Event Recorder to analyze 24 hours or more of RF activity.

678-714-2000; [www.kaltmancreationsllc.com](http://www.kaltmancreationsllc.com)  
sales@kaltmancreationsllc.com



From the microphone to the antenna, **Broadcast Connection** is your source for the latest in broadcast technology.

We offer a full line of the best products available.

**Contact our experienced team of specialists for all your radio needs.**



**Max Brown**  
Mukilleo, WA  
719-650-6330

[max@broadcastconnection.com](mailto:max@broadcastconnection.com)

**Terry Becht**  
Canyon Lake, TX  
830-899-7012

[terry@broadcastconnection.com](mailto:terry@broadcastconnection.com)

**John George**  
Lexington, SC  
803-951-7443

[john.george@broadcastconnection.com](mailto:john.george@broadcastconnection.com)

**Ken Perkins**  
Evergreen, CO  
303-674-6566

[ken.perkins@broadcastconnection.com](mailto:ken.perkins@broadcastconnection.com)

**John Shideler**  
Mesa, AZ  
970-227-1405

[john@broadcastconnection.com](mailto:john@broadcastconnection.com)

**Eric Wandel**  
Newburgh, IN  
812-490-7947

[eric@broadcastconnection.com](mailto:eric@broadcastconnection.com)

[www.BroadcastConnection.com](http://www.BroadcastConnection.com)

**Ethernet control surface  
Radio Systems**

**Millenium Console Platform:** Available in 8- and 12-channel versions, Millenium 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](http://www.radiosystems.com); [sales@radiosystems.com](mailto:sales@radiosystems.com)

**Voice processor  
Sound4**

**Voice AD:** A 3-band, 6-channel voice processor, Voice AD features analog/digital I/O. It runs on the new Sound4 PCI express board, a card powered with Shark DSPs. Its HQ Sound 192kHz processing chain includes a 3-band noise gate, an advanced de-esser, a 3-band processor, a 4-band parametric EQ and a brick wall limiter for finalization. The dedicated graphical user interface shows all six mics, status, affectations and user's names; recalling a mic to a user is done in two clicks. An innovative network preset management centralizes and distributes users presets on all Sound4 Voice processors connected to the network, and it can manage an unlimited quantity of users.

[www.sound4.biz](http://www.sound4.biz)

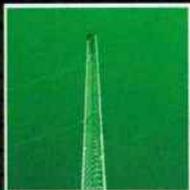
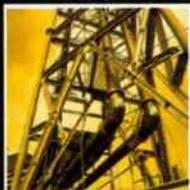
**Intercom codec  
Digigram**



**Iqoya \*Link/IC:** A 1RU codec, Iqoya \*Link/IC is dedicated to intercom applications, coordination circuits and voice commentary along video live contributions. Typically, the Iqoya \*Link/IC is a dual-channel full-duplex IP audio device offering G711 and G722 audio codecs and a back-to-back latency of under 30ms. Management of the equipment is offered via HTML pages or SNMP. Features include state-of-the-art stream management specs (such as stream jitter management, FEC, QoS and error concealment features compensating for lost packet errors).

703-875-9100; [www.digigram.com](http://www.digigram.com); [input@digigram.com](mailto:input@digigram.com)

Electronics Research, Inc. delivers innovative, high-quality, integrated solutions for broadcasters around the world and across the spectrum. Our team of engineers, designers, fabricators, and project managers take pride in contributing to your success by offering the industry's best antennas, transmission line, towers, and filters/combiners. To compliment our full range of products, ERI offers all of the broadcast services needed to transform your broadcast system into a broadcast solution. When planning your next project call us toll-free at 877-ERI-LINE or visit us online at [www.eriinc.com](http://www.eriinc.com).



Antennas | Transmission Line | Towers | Filters/Combiners | Broadcast Services

ELECTRONICS RESEARCH, INC. **ERI**

877-ERI-LINE • [www.eriinc.com](http://www.eriinc.com)

**Audio signal processing/routing/monitoring  
Mayah Communications**

**MAD Series:** This family of five different products is for signal processing, routing and monitoring. MAD1 with its high-quality headphone amplifier offers direct monitoring of any stereo or mono channel in the MAD1 stream. MAD2



provides a latency-free transparent signal conversion, splitting or distribution between its two coaxial BNC MAD1 interfaces and another two optical interfaces. MAD3 is a 1RU high-quality A/D D/A converter for 32 analog channels with sampling rates up to 192kHz. MAD4 is a multifunctional device, which can be used as embedder/de-embedder, controller for monitoring, communication device and even more. MAD5 is a matrix for up to 16 MAD1 ports, totally resulting in a full 1024 x 1024 audio channel matrix.

+49 811 55 17 0; [www.mayah.com](http://www.mayah.com); [info@mayah.com](mailto:info@mayah.com)

**Largest Inventory.  
Same Day Shipping.  
That's BSW!**



R55E-12 shown with optional modules

**Low Profile Console,  
High Profile Savings**

For a limited time, get a free phone module (\$700 value) when you buy the Audioarts R-55E 12-channel modular console! Only at BSW!

R55E-12 List \$6,755.00

**Call BSW Today!**



broadcast gear from people you trust



Lowest Prices and Largest Inventory on EVERYTHING For Broadcast

**BSWUSA.COM 800-426-8434**

**The Time to Buy YOUR  
EAS Gear is Now!**

Since time is getting short to upgrade your EAS gear, make it easy on yourself with the ultimate no-brainer: the Sage Digital ENDEC!

- Our most popular encoder/decoder
- 6 audio inputs, 6 serial ports, 5 GPIO inputs
- Plug-in compatibility to support seamless upgrades ensures full EAS compliance, now and into the future

DIGITALENDEC List \$2,695.00



**Call BSW Today!**

**2x6 switch core  
JK Audio**



**Concierge:** Allowing connection of two hybrids across six phone lines, this switch matrix routes six incoming analog phone lines to JK Audio innkeeper 1rx or innkeeper 2 digital hybrids. A firmware upgrade makes most older model hybrids compatible. Concierge adds music on hold input, auxiliary phone integration and intuitive call control. Two Concierge switch cores can be bridged together, providing six additional phones lines for a 2x12 system.

800-552-8346; [www.jkoudio.com](http://www.jkoudio.com); [info@jkoudio.com](mailto:info@jkoudio.com)

**IP for GSC3000 and VRC2500  
Burk Technology**

**GSC/VRC IP Converter:** The GSC/VRC IP Converter is made specifically for the GSC3000 and VRC2500 to allow reliable multi-user access from Burk's AutoPilot 2010 and Lynx 5 applications. The IP converter allows broadcasters to use existing IP links to carry remote control data, eliminating the need for costly telco circuits and other legacy links.

800-255-8090; [www.burk.com](http://www.burk.com); [soles@burk.com](mailto:soles@burk.com)

SPECIAL BSW PACKAGE

**Essential  
Mic Bundle**

Get Electro-Voice's gold standard RE20 bundled with the 309A shockmount and our custom-designed pop filter for more than half off list!



RE20PKG Package List \$1,022.00 **\$498.00**

"The BSW-difference is that they know the equipment they sell. If I'm not sure about a product or its specs, they will either have an answer for me right-away, or be happy to research it quickly and get back to me."



**Michael V. McCabe**  
Engineering Manager  
Univision Radio  
El Paso, TX

**Body-pack transmitter****Audio-Technica**

**SpectraPulse mtu301:** The mtu301 allows users the flexibility to clearly transmit audio as they move throughout the entire SpectraPulse coverage area. Simply plugging in a lavalier or headworn microphone to the mtu301, users can expand the performance for Audio-Technica's Ultra Wideband (UWB) wireless microphone system. SpectraPulse offers secure wireless operation for the installed sound market, free from RF competition, frequency coordination and white space issues. The unit provides bias voltage for electret condenser microphones. The mtu301 includes an on/off switch, a mute switch and LEDs indicating power/mute and link status, as well as low-battery warning.

330-686-2600; [www.audio-technica.com](http://www.audio-technica.com); [sales@atus.com](mailto:sales@atus.com)



# SOLID PERFORMANCE RELIABILITY SUPPORT

**Program Automation  
& Control is at the  
heart of today's  
broadcast facilities.**

ENCO delivers Performance demanded by today's talent, engineering and management.



ENCO designs software for high Reliability required for mission critical 24/7 operations.

ENCO delivers the Best Support in the Industry with a 20+ year history under our original founding ownership.

When you upgrade to DAD or Presenter, you're assured of World Class Digital Audio Delivery System Performance, Reliability and Support. If you upgrade now, we'll convert your library at no charge using our Intelligent Conversion Engine. Call us and learn how our experience can pay off for you.

**ENCO - Providing the tools & technology to positively impact your Bottom Line.**



[www.enco.com](http://www.enco.com)  
[sales@enco.com](mailto:sales@enco.com)  
+1-248-827-4440  
800-ENCO SYS

**FM/AM rebroadcast receiver****Crown Broadcast**

**CT-1 FM/AM:** This FM/AM receiver can be used with all Crown units up to 600W. It features 50dB quieting sensitivity (mono) of 11.2dBf and 60dB quieting sensitivity (mono) of 17.0dBf. Other features include THD (1kHz mono) of 0.03 percent, stereo separation (1kHz) of 61dB, signal-to-noise of 65dBf (mono) of 79.5dB, and adjacent-channel selectivity of 82dB (noise limited).

800-262-8919

[www.crownbroadcast.com](http://www.crownbroadcast.com)  
[fmsales@irec1.com](mailto:fmsales@irec1.com)

**Speaker  
Event  
Electronics****20/20BAS:**

Event introduces a new generation of clarity, transparency and definition with the release of the 20/20BAS.

This new speaker incorporates a number of fundamental improvements over the original model while remaining true to its character and performance strengths. The original transducer design and cabinet volume have been maintained, however the high- and low-frequency amplifiers, cabinet bracing and overall construction have been revolutionized to improve audio characteristics, increase dynamics and extend reliability. The new low-frequency amp can deliver up to 250W of peak power into the woofer.

805-566-7777

[www.event1.com](http://www.event1.com)  
[info@event1.com](mailto:info@event1.com)



**Payload adapter accessories  
Will-Burt**

**Accessories for Expedition Series:** Designed to increase efficiency and productivity while using The Expedition Series line of portable telescoping masts, these accessories include: EZ Raze, permitting the easy elevation of multiple antennas and equipment via winch and cable system; Rigid Guy Collar, enabling guying at top or mid-level of mast; Swivel Guy Collar, a free rotating four-point guy collar assembly, permitting the azimuth adjustment of the mast head without moving the guy ropes; Cup Holder, enabling mounting of antennas or other devices that have an insulator bar or mounting arm. Accommodates round adapters up to 1.75" OD; NATO Plate, enabling mounting of standard NATO VHF whip antennas with a four-bolt pattern; Bolster Plate, enabling mounting of devices using u-bolts or long bolts; Dual, Tri and Quad Arm Kits, enabling mounting of two, three or four devices to a single mast; Blank Plate, a multi-use adapter plate for field drilled mounting of various bolt patterns; and Stub Adapter, enabling mounting of one device at a top, center position on mast.

330-682-7015; [www.willburt.com](http://www.willburt.com)  
mastlite@willburt.com

**UPGRADES and UPDATES**

TFT has added options for the Model 3320 CAP-to-EAS converter to expand the capabilities and applications for text-to-speech conversion, external relay closure and an LCD setup panel. ([www.tftinc.com](http://www.tftinc.com))... **Axia** has upgraded its IP-audio driver. Licensed users can download new version without charge. ([www.axiaaudio.com](http://www.axiaaudio.com))... **Adobe** has released Creative Suite 5.5, which adds HTML5 authoring and mobile app development, and makes Audition available to Mac users. ([www.adobe.com](http://www.adobe.com))... The **Digital Alert Systems Dasdec** has completed the IPAWS Conformity Assessment to conform to receiving requirements. ([www.digi:alalertsyste.ms.com](http://www.digi:alalertsyste.ms.com))

**Automation system  
WideOrbit**

**WO Automation for Radio v3.0:** Including enhanced user profiles and security, new Canadian content calculator, plus a new, patent-pending work-saving feature WO Automation for Radio v3.0 delivers operational efficiencies to radio broadcasters. Its patent-pending technology provides seamless integration with WO Traffic. New features include: multi-market file transfer capabilities; enhanced user rights and controls; full integration with PR&E VMQuadra consoles; and Canadian content counter to help Canadian stations monitor CRTC compliance.

415-675-6700; [www.wideorbit.com](http://www.wideorbit.com)  
mzinsmeister@wideorbit.com



**Upgrade your Telos NX**

The world's leading talkshow software  
PhoneBOX – now for Telos NX

**FREE!**

- ✓ More control
- ✓ More features
- ✓ More flexibility
- ✓ More from your NX

**Revolutionize your NX!**



Download  
PhoneBOX NX Lite  
FREE TODAY

[www.phoneboxnx.com](http://www.phoneboxnx.com)

BROADCAST BIONICS



**Discuss your  
"Power Quality  
Strategy" with us.**

You know that there is not a ONE BOX solution to providing power quality protection for your facility. And you know that the most common and significant types of power line disturbances are short duration changes in voltage level (sags/surges) as well as sustained (high or low) voltage level changes. Power anomalies that your transmitter was not designed to accommodate on a continuous basis.

Now there is an answer for severe and damaging voltage fluctuations for all of your mission critical transmitter sites. Visit us at NAB to receive the details of our AVR/SPD Power Quality Package Promotion!



**Superior Electric**

28 Spring Lane • Suite 3 • Farmington, CT 06032 USA  
[www.superiorelectric.com](http://www.superiorelectric.com) • [info@superiorelectric.com](mailto:info@superiorelectric.com)

Telephone: 860-507-2025 • Fax: 860-507-2050  
Customer Service: 860-507-2025, Ext 70782

## Views from the convention as seen through our reporters' lenses.



1. OMT demonstrates the features of its iMediaTouch automation system.
2. Zetta is the new automation system from RCS.
3. NPR Labs received an NAB Technology Innovation Award. Mike Starling (left) accepts from NAB President and CEO Gordon Smith.



See more of the *Radio* magazine Photo Blog at [RadioMagOnline.com](http://RadioMagOnline.com).



4. Transmission line as art and identity, as show in the SPX booth.
5. The Society of Broadcast Engineers held its annual membership meeting on Tuesday afternoon.
6. The Audioarts IP-12 is one of the new offerings from Wheatstone.
7. Getting the scoop on the Arrakis ARC-10 console.





**8.** Omnirax discusses furniture options and layouts.

**9.** Radio Systems shows the new Platform console surface in the Broadcast Electronics booth.

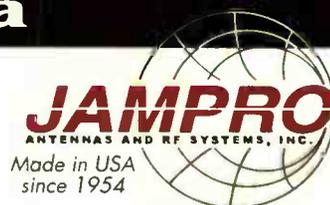
**10.** Yellowtec, in the BGS booth, added accessories to Mika support products.

**11.** The Mobile Broadcast Lab made a big impact for Orban.

## When You Want More Than Just An Antenna



*Full line of HD Radio Accessories:  
Circulators, Mask Filters,  
Reject Tuners, and  
Rigid Components.*



**MASTER FM DUAL INPUT HD ANTENNA**



**JSHD DUAL INPUT HD SIDEMOUNT ANTENNA**



**RCA 10dB HIGH LEVEL HD INJECTOR**

JAMPRO ANTENNAS/RF SYSTEMS, INC. • P.O. Box 292860 • Sacramento, CA 92829 USA • Phone (916) 383-1177 • Fax (916) 383-1182 • Toll Free (866) 452-6770 • www.jampro.com



Your Partner for HD Radio Solutions

# Colorado Consolidation

Colorado State University-Pueblo combines media efforts, building a new studio for KTSC 89.5



By Sam Lovato

KTSC 89.5 recently celebrated its 40<sup>th</sup> year of operation serving southern Colorado. Within a four-decade span the station has transformed from a 10W experiment into a Pueblo radio staple. Listeners over the years have enjoyed a multitude of programming alterations.

If you dialed up 89.5 in the 1970s, you would have heard an eclectic combination of jazz, rock, classical and blues. The 1980s added an emphasis on contemporary artists and the station's first trials with public affairs, news, sports, and talk content. During the 1990s, KTSC-FM had success reaching audience members with AOR, modern rock and CHR. By the end of the decade the station had

adopted the moniker "Rev 89, the Revolution," and earned the #2 rank in the market with a 7.7 12+ AQH share. In January of 2002 Rev flipped formats to rhythmic/CHR and ratings pushed even higher, they were the #1 rated station in Pueblo two years in a row earning a double-digit 12+ AQH share during the spring of 2003.

By 2004 the station had started to prepare for a major overhaul in studios, production space, and transmission. The Mass Communications Department and Center for New Media (MCCNM) at Colorado State University-Pueblo, which owns and operates KTSC-FM, had also begun the sketching process to consolidate the emphasis areas of the

# Well received all over!



Available from



[www.scmsinc.com](http://www.scmsinc.com)

**1-800-438-6040**

[sales@scmsinc.com](mailto:sales@scmsinc.com)

|                |                |
|----------------|----------------|
| MidSouth:      | 1-877-391-2650 |
| SouthAtlantic: | 1-770-632-1295 |
| NorthEast:     | 1-315-623-7655 |
| Central:       | 1-731-695-1714 |
| NorthCentral:  | 1-513-376-8600 |
| SouthWest:     | 1-210-775-2725 |
| MidWest:       | 1-513-899-3036 |
| West Coast:    | 1-866-673-9267 |
| Pro Audio:     | 1-877-640-8205 |
| Latin America: | 1-760-650-1427 |
| .Bradley Div.: | 1-800-732-7665 |

## The worlds best receiver just keeps getting better.



NEW OS available now, upgrade for  
free at [www.bwbroadcast.com](http://www.bwbroadcast.com)



| FM DSP Receivers | FM Transmitters | FM Power Amplifiers | RDS Encoders |  
| FM, HD, & AM Audio Processors | Audio over IP Codecs |

# Colorado Consolidation

major under one roof. Department Chair Jennifer Mullen says, "It became increasingly difficult to provide quality curriculum with faculty, courses, and media labs spread between two buildings at opposite ends of the campus; today's convergent media environment requires integration and we knew the answer was to move the department into the public television station. We have partnered with public television for 30 years anyway, and the move would solidify that relationship, as well as provide a real environment of media integration. The move would energized the students at KTSC-FM who would now be the focal point in the foyer of the building, and no longer relegated to old offices in an outdated facility."

This would ultimately mean moving the department's student media labs, which included the FM, a magazine and an online newspaper across campus. The plan also called for relocating the offices of seven professors, creating a new iMac lab with 22 stations, and building a server/network independent from campus fiber connections that could support the needs of MCCNM students, faculty and staff.

## The power upgrade

In 1997, the KTSC-FM license application hiccupped on a question about ERP compliance, so



The Rev 89 main studio is built around an Arrakis ARC-15.

# FOR 40 YEARS YOU'VE BEEN... COUNTING ON US!



Founded in 1971, ESE set out to provide quality precision master clocks and timing-related products, delivered on time with excellent service. And after 40 years these simple statements still guide us today. We take care of our customers. Our products have become the industry standard for affordable, reliable, perfect time. Thank you for 40 years!

Visit [www.ese-web.com](http://www.ese-web.com) to discover a brilliant display of timing systems designed for easy installation, set-up and operation. Put 40 years of "time" and experience to work for you.

# ESE

142 Sierra Street  
El Segundo, CA 90245  
(310) 322-2136

[www.ese-web.com](http://www.ese-web.com)



### Master control at the CSU-Pueblo Buell Communications Center.

the department felt compelled to replace the station's transmitter and antenna that had been in service for more than 20 years. The antenna was a Phelps Dodge CFM-LP-4. With the relicense process starting in the fall of 2004, the majority of the year was spent securing funding for and installing a Harris Z5FM 5kW solid-state FM transmitter equipped with the Harris Superciter FM exciter and the ERI LPX-6C-HW low-power circularly polarized FM antenna with 1/2-wavelength spacing.

KTSC-FM was granted relicense in April 2005 and the department shifted its focus on a move to the Buell Communications Center (BCC), which housed the offices of a Rocky Mountain PBS affiliate, a 2,500 square foot TV studio, four production suites, a student PC lab and a couple of classrooms. By 2009 campus administration had approved the move and a facilities facelift to accommodate MCCNM and several new admissions offices that would be housed in BCC as well.

The department allocated roughly \$80,000 to pay for Rev 89's new studios, the iMac lab, software updates, new video cameras and lighting kits, and the server/network. Specifically, the FM rebuild budget came in around \$15,000; MCCNM needed affordability and durability in their choices.

Faculty and staff attended the 2010 NAB Show to finalize decisions about studio furniture and multiple equipment improvements for both audio and video. Ultimately, they settled on Arrakis for the majority of the Rev 89 upgrades. The company's consoles coupled with its Gemini/Digilink automation system had helped transform the station in the 1990s. KTSC-FM Station Manager Mike Atencio noted that Arrakis' proximity to Pueblo was part of the decision.

Chief Engineer Dan Thomas looked at the studio project from several perspectives. First, he wanted reliability and equipment the stu-

dents would probably face in the industry. Second, with the studios moving into a highly visible area they needed to look professional and inviting to prospective students. Lastly, the tight budget and state regulations were an important consideration.

Atencio and Thomas chose the ARC-15 for the main studio and the ARC-10BP for production. KTSC-FM staffers needed at least four microphone channels and 10 source channels in the main studio to handle the station's I/O needs. They considered the PC soundcard channel for audio playback and record a definite plus; the telephone interface and cue system were more than adequate.

The 10-channel production console was ideal because it allowed Rev 89 staffers to connect multiple audio sources to be seen on real VU meters. The console also suited the needs of RMPBS producers building soundtracks or laying down voiceovers, as the production room is shared by both MCCNM and the affiliate.

The Arrakis Balanced U seemed like a fitting choice to support the ARC-15, microphone booms, an audio editor, a couple of PC monitors, and KTSC-FM's various rack mount units. Staffers wanted furniture that could comfortably accommodate three announcers and a board operator. Atencio admits the Balanced U was a bit outside the budget, but after seeing it on the exhibit floor at NAB

### Classic reliability meets modern connectivity

**Model RAK-2 Intelligent Rack Adapter**

- embedded RFC-1 transmitter remote control
- voice and network enabled
- web-based interface
- email / SMS text notifications
- system setup software included
- drop-in replacement for previous models

**Sine Systems**™

615.228.3500  
more information: [www.sinesystems.com](http://www.sinesystems.com)

# Colorado Consolidation

they were sold.

The department picked the Omnirax FRC36MAF to house the production studio equipment. It was an affordable, capable furniture choice considering the surface could double as an inviting video editing suite if needed.

## Stay on time

The studio installation took just less than two weeks. The timetable was based on two variables: equipment delivery and the completion of fiber lines to connect the new studio to the transmitter site. Thomas broke the ice on the installation by assembling the Omnirax furniture and inserting appropriate production pieces. Next, he pulled together the Balanced U and began building all of the I/O connections for the station's audio sources. With university fiber in place, he locked in the station's Lascomm multimode fiber units. This fiber connection eliminated a pair of old analog audio cables that ran almost 1,000'.

Early on in the planning process, Thomas had communicated to the department that he wanted to get the students involved in the installation. KTSC-FM staffers were already pumped up about the possibility of a new main studio and production room so it didn't take much convincing to get them to lend a hand. Rev 89 Student Station Manager

John Dalton says, "The move went a lot smoother than I expected, the staff was really helpful and excited to get into the new studio." Thomas says that working with the department's student broadcasters, who as he put it, "are the real KTSC-FM soul and sound," was enjoyable. Thomas says the students offered suggestions and help whenever needed, and they learned on the job at the same time.

RMPBS Producer Ken Sciacca was also



**Taylor Zinanti broadcasts afternoon drive from the main studio.**

looking forward to having new neighbors at the television station considering the Rev 89 move to BCC would create new prospects for collaboration. Shared use of the audio production booth means a better utilization of space and resources. Students can put their production skills to use doing voiceover work for the TV station. RMPBS staffers thought the increase in student presence might also provide

## Equipment List

### Main Studio

360 Systems SC182 ShortCut  
Adobe Audition 2.0  
Arrakis Accent Balanced U,  
ARC-15  
Carvin H400  
CSI FM/AM P-FA  
DBX 286A  
Electro-Voice RE27  
Gemini CLX-01  
Gentner SPH10  
Powergold  
Sage EAS Endec, Endec  
receiver  
Scott Studios SS.32  
Tascam CD-RW9075L

### Production Studio

Adobe Audition 2.0  
AM/FM stereo receiver  
Arrakis ARC-10BP  
Carvin H400  
DBX 286A  
Electro-Voice RE27  
Fostex CD200  
Omnirax FRC36MAF  
RCA STA-3850  
Roland DS-50A  
Scott Studios SS.32

### Remotes/Field

Audio-Technica ATW-RT3  
JK Audio Remote Mix Sport  
Roland Edirol R-09  
Sennheiser HMD280  
Shure L4, SM2

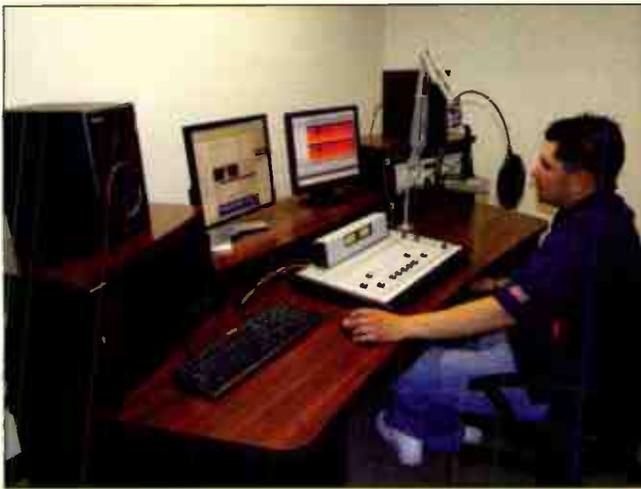
PRE-WIRED STUDIOS | ON-SITE INSTALLATIONS | BROADCAST FURNITURE | EQUIPMENT SALES



(847) 487-7575

**RAM SYSTEMS LLC**  
WWW.RAMSYSTEMSONLINE.COM

(800) 779-7575



**Revolution staffer Javier Banuelos edits a promo in the production room.**



**Chief Engineer Dan Thomas assembling cables on day four of the installation.**

more opportunity for majors to get involved with the television production that takes place daily.

The only real issues the team faced during the installation were getting every thing in place to start the work. Thomas says there were some ordering glitches and paperwork involved that slowed them down a bit, but the university staff always came through. He

added, "As a broadcast engineer you always would like to have more new goodies but economies must be obeyed; the overall experience was great fun for me, we're lucky to have an administration that is supportive of the station and staff."

*Lovato is an associate professor in the Mass Communications Department at Colorado State University - Pueblo.*

## Advanced Wattchman Monitor®/Alarm

*For Analog and Digital Broadcasting*



The Model 81094 is the first in a series of Internet/Intranet accessible Advanced Wattchman® Wattmeter/Alarm systems that will monitor both forward and reflected power in two transmission lines with only one controller. Unlike previously available systems that needed one controller for each transmission line, the Advanced Wattchman® will monitor two lines (4 ports). The front panel display shows power on both systems simultaneously. Operating conditions may also be displayed on a PC from any location on the Internet/Intranet.

It is designed to work with a series of specialized line sections from 7/8" to 6-1/8" and standard Coaxial Dynamics elements for either analog or digital applications.

**Coaxial Dynamics** 6800 Lake Abram Drive • Middleburg Hts, OH 44130  
Phone: 440-243-1100 Toll Free: 800-COAXIAL Fax: 440-243-1101  
[sales@coaxial.com](mailto:sales@coaxial.com) • [www.coaxial.com](http://www.coaxial.com)

## FACILITY FOCUS

**The technology behind KTSC**

### **Powergold Music Scheduling Software**

The choice for many of the world's leading broadcasters is a program director's dream. With industry leading performance and an arsenal of tools at your fingertips you'll find Powergold delivers on so many levels you'll wonder how you ever lived without it! Many have contributed to make Powergold what it is today:



A powerhouse packed full of tools to give your station the competitive sound signature it deserves. Out of the box Powergold is different — different in ease of use and performance. Call Brenda Burt now to set up a FREE evaluation. Find out how easily Powergold interfaces with your automation and traffic systems.

*"We have been using Powergold since 2004 and love it! The customer support is fantastic, as well as the software...very user-friendly."*

— Mike Atencio, KTSC-FM Rev 98 Station Manager

**[www.powergold.com](http://www.powergold.com)**  
**800-870-0033**

**Advertisement**

## Installing a directional antenna

By Doug Irwin, CPBE AMD

Perhaps you've had occasion (or will soon) to put up a directional antenna on a tower—say for example, an antenna for a translator or booster. Many times this type of antenna is an "array" made up of two antenna elements or more. The station's construction permit will specify the bearing angles of the antenna elements, reference to true north. So before the day that the riggers are on the tower, looking down at you expecting an answer, you should consider just how to set this angle in the field.

Fortunately, with a few simple pieces of information, and some geometry, it can all be figured out ahead of time. The key piece of information is the relationship between the tower faces and true north. The tower owner should have that information from drawings when the tower was erected. A land surveyor will have included that information on the drawing. Look at Figure 1 to see what I mean. To

so I'm going to use the line AB as our reference bearing. Once that is clear to you, take a look at Figure 2.

Now in Figure 2 (not scaled by the way) I've depicted a horizontally polarized yagi attached to leg B.

Take a look at these two relationships:

Reference bearing – target bearing =

remaining angle

$180 - \text{remaining angle} = \text{set angle}$ .

Here is a quick example: Let's specify the target bearing (taken from the CP) as 111 degrees. Then, from Figure 2 we have:

$150 - 111 = 39$  and  $180 - 39 = 141 = \text{set}$

angle [with respect to tower face AB].

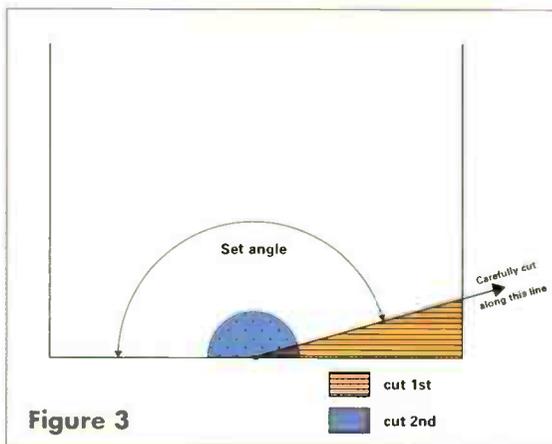
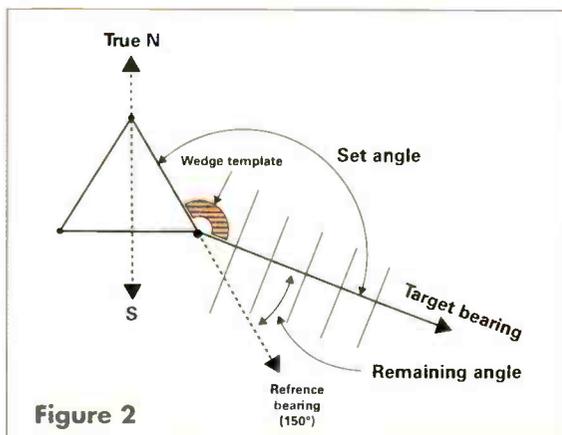
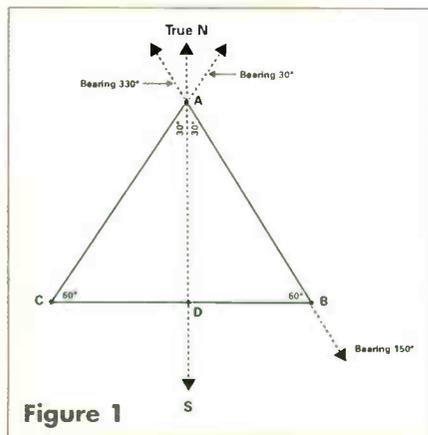
Of course I've made this a simple example by orienting the tower conveniently. Going back to Figure 1, the line AD is at a bearing 180 degrees true (and our reference angle is 150 degrees true). If, from drawings, you found that this angle is rotated clockwise (easterly) then simply add that clockwise rotation in degrees to the reference angle. If the line

AD is rotated counterclockwise (westerly) then subtract that rotation from the reference angle. Once you have your reference angle, use the same two equations above.

So now you have your "set" angle. How do you get your riggers to implement it? Easy, actually. You're going to create your own "wedge" (or pie slice if you prefer) with a piece of cardboard, a protractor, a straight-edge and a sharp knife. Take a look at Figure 3. Using a piece of stiff cardboard, and a protractor, mark the set angle, and then carefully remove the part of the cardboard that corresponds to the "remaining" angle. (You may want to consider cutting a semi-circular portion out of the center as well.)

Give this template to your riggers, and tell them to use it in setting the direction of the boom for the antenna that they're pointing. (Refer to Figure 2 again.)

*Irwin is transmission systems supervisor for Clear Channel NYC and chief engineer of WKTU, New York. Contact him at [doug@dougirwin.net](mailto:doug@dougirwin.net).*



### We need your tips!

Ideas submitted to Tech Tips may be suitable to earn SBE recertification credits.

Do you have a tech tip? Send it to us at [radio@RadioMagOnline.com](mailto:radio@RadioMagOnline.com)

make this example clear, I've set this tower so that the line BC goes directly east to west. Digging up your memories of geometry class, you can then see that the line BA is pointed at a bearing of 330 degrees true. Conversely, the line AB is pointed at a bearing of 150 degrees true. In this example, the antenna will be mounted on leg B,

# GOT ONE OF THESE?



## You Need One of These



**ACS 8.2 Plus** Audio Control Switcher



**ADMS 44.22** AES/Analog Digital Matrix Switcher



**SS 4.4** Stereo Matrix Switcher



**DAS 8.4 Plus** AES/EBU Digital Audio Routing Switcher



**SS 16.4** Stereo Switcher



**SS 2.1 III** Switcher/Router

**BROADCAST**<sup>®</sup>  
*t o o l s*

**PROBLEM SOLVED**

[www.broadcasttools.com](http://www.broadcasttools.com)

USA Proud





## Blue Microphones Mikey

By Chris Wygal, CBRE

**I**magine for a moment that you're a reporter for a local FM talk station. One day at lunch, you're at a diner on Main St. enjoying a BLT. Suddenly, a transit bus collides with a stopped car right in front of the diner. Then, another car runs into the bus! The next thing you know, there is a major traffic event downtown. As you pick up your iPhone to call 911, you notice it's 12:51, nine minutes until the next news break. The only thing you've got is your cell phone. There *must* be an easy way to file a report with full-bandwidth audio. Incidentally, there is. The Mikey from Blue Microphones snaps onto your iPhone, enabling crystal-clear stereo audio to be recorded

and quickly uploaded to an FTP server. It's very easy to install and understand. The only thing that is hard to understand is that you're preoccupied with audio quality during a disaster like this!

By the way, nobody was injured in the accident. It was just a nasty fender-bender, and your report

bypassed. A three-position sensitivity switch allows for attenuating the microphone depending on source SPLs. Mikey swivels 230 degrees to allow for proper placement. As a handheld mic, tilt it back to emulate the pickup pattern of regular handhelds. If placed on a desk, tilt it forward to face the sound source. Two transducer-type pressure gradient cardioid condenser elements live inside the mic capsule with a frequency range of 35Hz to 20kHz. Mikey's output sample is 16-bit, 44.1kHz.

### Put into use

Given the nature of radio, Mikey would most likely find the majority of its use in on-location interview situations. While testing, it was used as a handheld mic and moved back and forth between the two voices. It was also placed on a table between the two voices. Mikey works extraordinarily well as a handheld mic, especially in the area of rejecting handling noise, and of course, overall frequency response. However, the on-table placement was the most interesting. While Mark (our production director) and I chatted back and forth as if conducting an interview, I placed Mikey between us about 2' away. We talked normally and found that off-mic proximity issues were hardly, if at all noticeable. The sensitivity setting was on the middle position and levels were perfect. The stereo nature of the recording also allows for phenomenal capturing of natural sound. The stereo image is reproduced very

## Performance at a glance

Simple interface with iPod and iPhone

Stereo cardioid pattern with 35Hz to 20kHz response

BlueFire app for easy recording and file management

3.5mm jack for plugging in external sources

sounded fantastic. Now we can talk at ease about Mikey. It will work on most generations of the iPod Touch, Nano and Classic, and the iPhone 3GS or earlier (an iPhone 3G, was used to test for this article). The mic itself will plug into the port on the bottom of an iPhone or iPod, and it has a handy mini USB plug on the side. This serves as a power port to power the device since Mikey is using the power port. A 3.5mm jack on the top is an input for recording audio from stereo sources, like the output of a CD player, for example. When the 3.5mm jack is active, Mikey's microphones and sensitivity switch are

accurately. Operationally speaking, the easiest part about Mikey is that the iPhone (3G is this case) is immediately recognized by the device. No driver or software installation is necessary. In addition, Mikey is more than just an interview microphone. The stereo configuration makes it very handy for recording music. When placed in front of guitar, a warm, clear and full response is reproduced.

## Recording, editing, uploading

Blue FiRe is a downloadable application available for iPods and iPhones that provides an easy-to-use recording and playback interface. Familiar transport features and file management via FTP make recording and sending audio very efficient. As an example, in an environment with Wi-Fi, a 50-second interview was uploaded using Blue FiRe's FTP feature. The file was ready for download within seconds of pushing the stop button. It was stunningly fast. Also within Blue FiRe are the adjustments for mic gain and quality, plus several nifty features like timed recording, level thresholds and indexing (great for marking time in an interview). A level meter is displayed right under a big counter displaying minutes, seconds and frames.

We live in a time when audio recording devices are getting smaller. In addition to recording, other developers have created apps for iPhones that allow for IP-based RPU connectivity. Not only does Mikey complement recording technology, but now full-bandwidth audio can be captured, edited and transmitted live from a cellphone. Blue Microphones has aided the process immensely. Mikey transparently and cleanly captures stereo audio and the quality is tough to match. 🎤

## Blue Microphones

**P** 818-879-5200

**W** [www.bluemic.com](http://www.bluemic.com)

*Wygal is the programmer and engineer for Victory FM at Liberty University in Lynchburg, VA.*

Editor's note: Field Reports are an exclusive Radio magazine feature for radio broadcast systems. 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 such equipment and to aiding the author if requested.

It is the responsibility of Radio magazine to publish the results of any device tested, positive or negative. No report should be considered an endorsement or disapproval by Radio magazine.

# new HIGH EFFICIENCY TRANSMITTERS series

## NEWS:

- Efficiency up to 84%
- TFT Screen & Touch Keyboard
- Consumption optimization & noise decrease by means of the speed control of cooling fans
- Remote control & Telemetry

## SERIES:

- EM 1500
- EM 3000
- EM 9000
- EM 12000
- EM 6000



3100 NW 72nd. Ave. Unit 112 · Miami, FL – 33122 USA · [www.omb.com](http://www.omb.com)  
Pol. Ind. Centrovía · C/Paraguaya, 6 (La Muela) · 50198 Zaragoza (Spain)



## IK Multimedia iRig Mic

By Barry Thomas, CPBE CBNT

**T**he Apple iPhone, Android-based and other mobile devices have become ubiquitous tools for field production and on-the-spot radio. Software manufacturers have responded by providing all sorts of production and ingest apps to leverage and improve the tool. Face it: Since almost everybody carries a cellphone now, it makes sense to use it to gather remote audio. These devices present some unique challenges for using a device not specifically designed for the application. One area of improvement is the microphone, for both quality and ergonomic reasons.

A number of adapters are available that allow you to connect some professional microphones to mobile devices. The limitation with adapters is that some mics and headphones work better than others. Only through trial and error do you really know how the device will work. The

### Performance at a glance

Quality condenser-electret unidirectional capsule

Rugged, durable metal housing

Simple and easy to use

Dual mini-connector allows real-time monitoring on headphones, speakers, mixers, PAs

Includes free recording app

Can be used with other apps

iRig Mic incorporates the iPhone-compatible mic/headphone adapter with a high-quality cardioid microphone that's proven to work with the iPhone.

Before I received the iRig Mic, I did what many of us do: searched the Web. I found it interesting that most of the reviews and comments about this device were actually about the iPhone App called Vocal Live, not the mic itself. I thought this was curious but, considering the environment of most consumers, not surprising. The hardware itself is fairly simple and straightforward. Most consumers will be interested in the application.

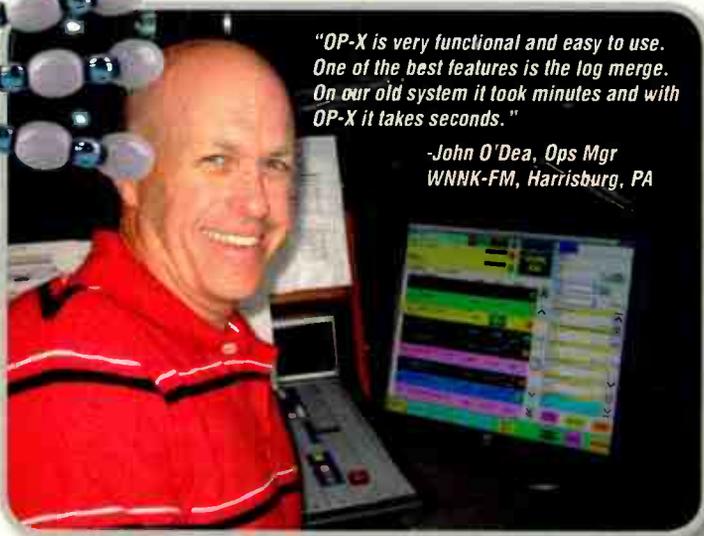
Most readers of *Radio* magazine will use this mic with one of several iPhone/iPod/iPad apps for radio circumstances: RCS iPush, Tieline ReportIt, Enco iDAD for example.

### Getting connected

The iRig Mic is a unidirectional electret-condenser mic with the look of the Shure Beta microphones. It has a permanently attached 6' cord with a special 1/8" plug that holds the mic cable and a 1/8" headphone jack. As you might expect the headphone jack extends the regular headphone jack but it allows for real-time monitoring using typical ear buds or high-impedance headphones with a 1/8" plug. It has a three-position mic sensitivity switch on the side. This is one of two accessories of this type made by IK Multimedia. The other is a similar device but it's designed for guitars. Both devices work with the iPhone, current version iPod Touch and iPad.

I found the mic sound to be fairly good, especially considering this price range. It's an electret condenser, like the iPhone on-board mic, but it has better high frequency response and it's unidirectional. The cardioid pattern isn't extremely tight but it's enough to help isolate excessive room noise in normal environments. It performed pretty well in interview and recording tests using a variety of applications. The iRig seemed to have an acceptable amount of gain as well. All of the apps I worked with accepted the mic audio and controlled the headphone level and mix well.

There are a few quirks. The attached cord actually makes things a little complicated. It's designed apparently to connect to an iPhone that's sitting on a desk or music stand (or an iPad using the company's iKlip, iPad stand adapter). The cable is a bit long for a handheld interview mic. One of two things tends to happen in that case: The user



"OP-X is very functional and easy to use. One of the best features is the log merge. On our old system it took minutes and with OP-X it takes seconds."

-John O'Dea, Ops Mgr  
WNNK-FM, Harrisburg, PA



- Modular Operation in Op-X allows for a tiered system at a fraction of the cost of it's 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.

# AUTOMATION

SIMPLE • POWERFUL • REDUNDANT

*Not since Axia audio-over-IP was introduced to the broadcast industry have we at BGS been so excited! It is with great enthusiasm we'd like to invite you to take a look at the new Op-X Radio Automation delivery system for any single or multi-station cluster. Op-X's versatility allows it to operate seamlessly with either Axia IP-Audio networks or legacy audio consoles.*



**Broadcasters  
General Store**  
352-622-7700  
www.bgs.cc

trips over the cable or, more likely, the cable gets wrapped up in a little ball and hangs awkwardly. Also, since it's a fixed-length cable it's not possible to add cable so the mic can be left on a podium (or near the morning show stunt) leaving the iPhone and app at a safe distance.

**IK Multimedia**

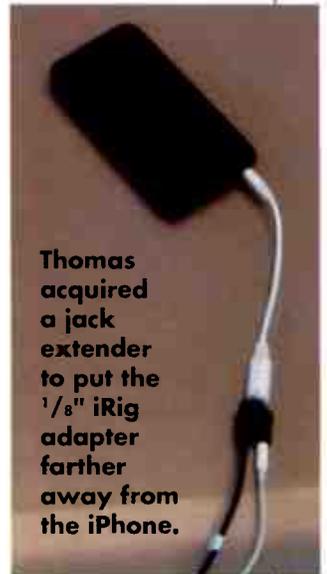
**P** +39 59 285496

**W** www.ikmultimedia.com

One feature is the level switch on the side of the mic. It sits where the on-off switch would normally sit and has three positions: I, II, and III. The switch works actually in reverse as you think it might because the icons denote mic sensitivity as opposed to mic gain. What would seem to be the lowest setting is actually the opposite – the most sensitive. I noticed in

one Web review the author assumed his unit had a manufacturing defect. It takes getting used to.

One final quirk was the 1/8" adapter. It's an integrated iPhone plug and headphone splitter/jack. This ends up being a fragile-looking lump of plastic and wires plugged right into the phone. In radio remote and interview applications, I can see this causing a ruined iPhone headphone jack within days. I immediately acquired a jack extender (see photo), which put the rigid adapter a few inches away from the iPhone and made it seem a little less risky.



**Thomas acquired a jack extender to put the 1/8" iRig adapter farther away from the iPhone.**

The iRig Guitar adapter incorporates this sort of extender so it's interesting that IK Multimedia didn't use the same technique on the iRig Mic. I suspect that, again, IK envisions the use of the iRig mic in desktop situations where the phone sits flat on a surface, not the hustle of radio remote broadcasting.

Quirks notwithstanding, the iRig Mic is a useful tool for getting good quality audio into the iPhone, iPad or iPod Touch. The attached cable design actually makes for a simple experience with fewer components to carry. A reporter could easily have this in a portfolio or briefcase and quickly attach/detach without a much hassle. The quality, directional pattern, and simple operation make this a very good way to improve field production using IOS devices. The price makes it so it's possible to have one or two spares on the shelf for the inevitable catastrophe. It's certainly worth your own evaluation and consideration.

*Thomas is vice president of engineering for Lincoln Financial Media, Atlanta.*

Editors 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.

It is the responsibility of Radio magazine to publish the results of any device tested, positive or negative. No report should be considered an endorsement or disapproval by Radio magazine.

**DYNAMAX MX SERIES**

- 6 to 18 channel configurations
- 24 or 36 inch wide frames
- 2" or 3" wide module options
- 4 Output Buss (two Stereo and two Mono)
- Metering for all 4 Outputs
- 2 - 4X1 auxiliary inputs standard
- Mic preamp on first two channels

**MODEL 340**

**MX12E**

**MX12LW**

**MODEL 343**

215-547-2570  
www.sandiesusa.com

**SANDIES**

**2011 PICK HIT Radio**

**Want to know more about the Pick Hits?**

Watch the Pick Hits Videocasts for demonstration videos of all the winners.

Get the link at **RadioMagOnline.com**.

The Pick Hits from *Radio* magazine, the radio technology leader.

## TWO CUTTING EDGE MONITORS TO HANDLE YOUR FM MONITORING NEEDS IN THE 21<sup>ST</sup> CENTURY FROM THE COMPANY YOU HAVE KNOWN AND TRUSTED FOR OVER 45 YEARS

### THE AWARD WINNING, ACCLAIMED **FMHD-1**

POWER INCREASE READY WITH "NEW" USER ADJUSTABLE MASK  
VERSION 4.0 SOFTWARE AVAILABLE NOW!



- Direct Sampling of the FM RF Carrier
- Digital FM Carrier Demodulation
- Frequency Agile on both Antenna & High Level RF Inputs
- RF Spectrum Analysis with FFT Power Band Calculations
- Metering of Analog Total, Pilot, L, R, L+R, & L-R
- Metering of HD L/R/L+R/L-R Audio
- Time Alignment Cross Correlations Analysis  
±16384 Samples, ±375 ms
- HD Control and Status Information
- HD SIS and PAD Data
- BER (bit error rate) Measurements
- RJ-45 Ethernet Interface with Remote PC Software

### THE ALL NEW FM SOLUTION **FMCS-1**

ALL-IN-ONE FM MODULATION MONITOR



- Direct Sampling of FM RF Carrier
- Frequency Agile on both Antenna & High Level RF Inputs
- AM & Sync AM Noise Measurements
- Variable BW Digital IF Filtering
- Digital FM Demodulation with 100dB 75µs SNR
- Variable BW Composite Filtering
- Digital Stereo Demodulation with 100dB L/R Separations
- Full Metering of Analog Peak and RMS Values
- RDS Injection and Full Data Decoding
- Two Digital SCA Decoders
- RF, Composite and Audio FFT Spectrum Analysis
- RJ-45 Ethernet Interface with Remote PC Software



## BELAR

VISIT [BELAR.COM](http://BELAR.COM) FOR THE LATEST PRODUCT INFORMATION & SOFTWARE UPDATES!  
"When accuracy counts, count on Belar" • 610-687-5550 • [sales@belar.com](mailto:sales@belar.com) • [www.belar.com](http://www.belar.com)

## CircuitWerkes Web Power!



### SiteSentry2 - \$329 Transmitter Controller

With 2 analog meter inputs, 2 status inputs, an audio sensor & onboard temperature sensor, you can monitor your site from any Web browser, anywhere! Six relays (2 DPDT & 4 SPST) give ample control for many stations. Automatically detects meter low & meter overload conditions for metering inputs, audio monitor and temperature sensor.



### Sicon-8 - Web & Dial-up Remote Control

The Sicon-8 lets you control your site via Internet with its internal Web server, via telephone, auto-answering cell phone or our free software. Setup is a breeze using the Siconcontroller software that also includes scripting, e-mail alerts, multi-site management, virtual metering & more!



### Silence Sentinel - Audio Monitor w/Web

Silence Sentinel ushers in a new era of analog audio monitoring. Monitor your audio from any Web browser. When silence is detected it can perform user-programmed, automated, sequences of relay actions & can also respond to user control via the network or via external status inputs.

Get info on these & other great remote control products at [www.circuitwerkes.com](http://www.circuitwerkes.com)

## Dixon Systems Inc.

Introducing the **NEW AES-1-10**  
Low cost, high performance digital to analog converter!

CLK-26

Digital to Analog Converter  
Model AES-1-10

LEFT OUT RIGHT OUT

Dixon Systems Inc.

AES-1-10

CLK-20C

NM-250 MKII USB  
Now in Broadcast Gray

Pro USB

AI-22  
Timer

Pro USB

[www.dixonsystems.com](http://www.dixonsystems.com)

See your dealer or call TOLL FREE: 1-800-387-6141

Visit [www.torpeytime.com](http://www.torpeytime.com) for our complete line of clocks & timers



The CAP-DEC1, Gorman-Redlich is a stand-alone CAP-to-EAS converter for use with your existing emergency alerting equipment. This cost-effective device allows broadcasters to easily meet Common Alerting Protocol (CAP) compliance requirements mandated by the FCC without requiring the purchase of an additional encoder/decoder system or other costly

equipment. The CAP-DEC1 is CAP 1.2 compliant and requires only one unit of rack space. Trust the experts with over 35+ years experience in the emergency alerting industry to help you meet your broadcasting needs. Visit our website or contact us today for more information about the Gorman-Redlich CAP-DEC1. We continue to support equipment we made 35 years ago.



**PRICE \$1350**

- Compatible with any existing EAS encoder/decoder made by any manufacturer
- Powerful 1.6GHz dual core processor and 1GB of memory
- Built-in text-to-speech conversion functionality
- FAST Gigabit network capability with built in firewall for security
- Options to print, store or email logs via built-in email server
- Five (5) USB ports for peripherals
- Nearly limitless storage capacity for logs and audio messages
- Automatic clock synchronization via NTP servers
- Software can be updated via LAN or USB
- Print alert reports to USB or network printer
- Polling 3 URL's currently with room for future expansion

Gorman-Redlich Mfg. Co.  
www.gorman-redlich.com

257 W. Union Street, Athens, OH 45701  
Phone: 740-593-3150

## MULTI-STATION CONTROL for your Endec



- \* Control up to 3 additional stations for a total of 4
- \* Compatible with both the original SE1822 & the new Digital 3644 when used in the analog audio mode
- \* Both rack mount (MSRA-RM) and table top (MSRA) units available
- \* Master & individual station recessed front panel EAS audio gain controls
- \* Individual left and right channel LED EAS activity indicators for each additional station
- \* Test button for easy audio gain setup
- \* Screw type pluggable Eurostyle connectors for positive and secure connections
- \* Fail Safe contacts in case of a power failure

and the best part is the price!  
MSRA-RM only \$549.00  
MSRA only \$489.00

For details on these and other innovative products for the broadcaster, call or visit us on the web at:

[www.dmengineering.com](http://www.dmengineering.com)

2174 Chandler St. Camarillo, CA 93010  
805-987-7881 800-249-0487

## WHERE GREAT RADIO BEGINS

### Harris® HDI200™ Importer



Finally, an affordable, compact, high-performance, server-grade radio importer with a solid-state hard drive for increased reliability and performance, available to manage and multiplex all HD Radio™ advanced application services.

Learn more at  
[www.broadcast.harris.com](http://www.broadcast.harris.com)  
or (800) 622-0022.



nott ltd

3801 La Plata Hwy  
Farmington, NM 87401  
Phone 505-327-5646  
Fax 505-325-1142

### Folded Unipole



Antennas

Detuning Systems



Gilastat  
Lightning  
Dissipation  
Systems



Nello Towers

Radian/Rohn  
Towers

[www.nottltd.com](http://www.nottltd.com)  
[info@nottltd.com](mailto:info@nottltd.com)

## Broadcast equipment for less.

Our competition may have led you to believe that you know them, or that you can trust them. But the plain truth is that they just want your cash, and lots of it!

In a time when cash is scarce, a better concept in sales, perhaps a more progressive one, is to work for a smaller profit and pass the savings along to the customer.

Realize the savings you can put in your pocket.

Call, click, or stop by Progressive Concepts today!

THE BEST IN BROADCAST ELECTRONICS SINCE 1990

 **progressive concepts**  
305 South Bartlett Road • Streamwood, IL 60107

www.progressive-concepts.com  
(630) 736-9822



**MOORETRONIX**

BROADCAST & INDUSTRIAL ELECTRONICS

### Our 11th Year

Our client list continues to grow. Thank you for your confidence and equipment purchases.

### We Re-Condition

Pacific Recorders BMX I-II-III, AMX, ABX and RMX, Stereo-Mixer and Mixer News-Mixer products.

### We Have

Replacement Wind Screens and Blast Filters for the SM-5B microphone.

### We Repair & Re-Crystal

STL Transmitters, STL Receivers, and RPU equipment.

See the "News-Update" page at our website.

Tel: 800-300-0733 Fax: 231-924-7812

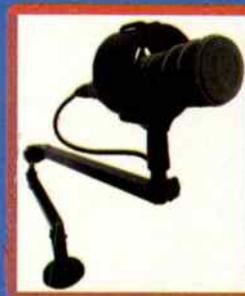
WWW.MOORETRONIX.COM

E-Mail us at: rrmooejr@aol.com

## LOW PROFILE MIC BOOMS

AMB-23-4

HMB-14-4



Ideal for studios that require non-restricted eye contact.

Great for Radio Studios that are on camera.

STUDIO ITEMS INC

815-669-2070

# GALLERY

Leading the  
HD Radio  
Revolution!

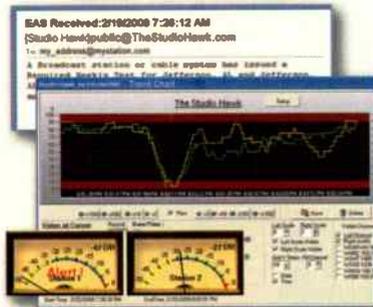


FM Antennas  
Combiners  
Filters  
HD Radio

**Shively Labs**

www.shively.com  
sales@shively.com  
888-SHIVELY Fax (207)647-8273

Your low cost solution to  
monitoring audio and  
EAS receivers!



Whether providing scheduled, detailed, dead air reports for local management, or as it's currently being used to monitor one of the industry's largest satellite teleports, The Studio Hawk is a power-packed product exceeding expectations.

**THE STUDIO  
HAWK**

www.TheStudioHawk.com

## PHASETEK, INC.

PHASETEK'S manufacturing facility and components expertise are available to design and fabricate any type of inductor or special R.F. component.

Our experienced staff of engineers and production personnel are dedicated to provide the broadcast industry the highest quality custom designed phasing equipment.



CUSTOM PHASOR INSTALLATION

RADIO STATION WKYT, DETROIT, MICHIGAN  
9 TOWER, 50 KW DA-2 PHASOR SYSTEM

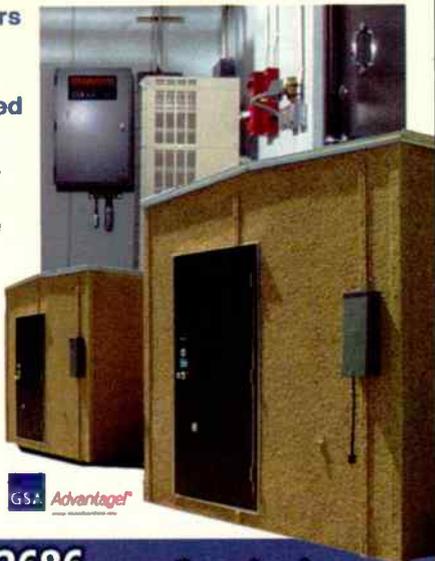
**PHASETEK, INC.**  
550 CALIFORNIA RD, UNIT 11  
QUAKERTOWN PA 18951

PHONE: 215-536-6648 FAX: 215-536-7180  
TOLL-FREE: 800-742-7383

## Quality, Flexibility, Value, Customization

Equipment shelters  
and cabinets  
designed, built,  
wired and delivered  
on time for your  
equipment needs.

- The First Choice of 32 State Governments and hundreds of Local 911 Services
- Full Equipment Integration
- Delivered on Time



GSA Advantage!

1-800-356-2686 • www.thermobond.com

**THERMOBOND**  
BUILDINGS

Fast. Friendly.  
Focused. Flexible.

## Transcom Corporation

Fine Used AM & FM Transmitters  
Authorized Representatives for all major equipment manufacturers

### USED FM TRANSMITTERS

|            |      |  |
|------------|------|--|
| 3.5+1.75KW | 2007 | BE FMI301, solid state                             |
| 4 KW       | 2007 | BE FM4C, solid state                               |
| 14+5 KW    | 2005 | BE Fmi1405 (XPI10 & ldi10) FM & HD, solid state    |
| 20 KW      | 2005 | BE FM20S, solid state                              |
| 25 KW      | 1986 | Harris FM25K, solid state IPA                      |
| 25 KW      | 2005 | Harris HT25CD                                      |
| 30 KW      | 1990 | Continental 816R-6C, with new dual solid-state IPA |

### USED AM TRANSMITTERS

|       |      |                    |
|-------|------|--------------------|
| 10 KW | 1988 | Nautel Ampfet ND10 |
| 10 kW | 2005 | Harris DX10        |
| 60 KW | 2000 | Nautel XL60        |

Please see our current listings on our website

### NEW TV TRANSMITTERS

Visit our website for the latest sales  
**Special Discount Pricing On:**  
VHF and UHF TV Antennas (10w to 10kW)  
TV STL

### EXCITERS

(2008) BE FM100C exciter,  
**new, never used!**  
Used BE Fxi-250 FM & HD Exciter  
with Exgine card  
Used BE XPI 10, HD Generator

### USED MISC. EQUIPMENT

Used Misc. Equipment  
Used Bird Wattmeter with Elements  
Orban Optimods 8200, 8100XT, 8100A  
BE FC30, SCA Generator

Please visit our web site, [www.fmamtv.com](http://www.fmamtv.com) for current listings or  
**CALL US FOR A QUOTE!**

2655 Philmont Ave. Suite 200, Huntingdon Valley, PA 19006  
800-441-8454 215-938-7304 Fax: 215-938-7361

## AM Ground Systems Co.

www.amgroundsystems.com

1-877-766-2999

PHYSICAL  
AM SITE SERVICES

CONSTRUCTION

EVALUATION

REPAIR

SAMPLE, FEED & CONTROL LINE LOCATION, REPLACEMENT & REPAIR

MOM MODELING PREPARATION WORK

SERVING THE TECHNICAL AND CONSTRUCTION NEEDS OF AM BROADCASTERS FOR OVER 25 YEARS

- Has your AM station lost coverage?
- Is your AM ground system over 30 years old?
- Has your ground system been damaged or vandalized?
- Base impedance or DA pattern unstable?
- Dramatic system or range changes in wet-to-dry conditions?

All of the above are indicators of hidden ground system problems that may be reducing your coverage.

SAMPLE TOROID RETROFIT SOLUTIONS  
AND  
SAMPLE LINE REPLACEMENT  
FOR  
METHOD-OF-MOMENTS DA PROOFING

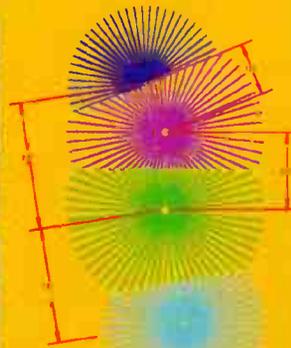
Contact us today for a no obligation quote on any of our services.

877-766-2999

eng@amgroundsystems.com

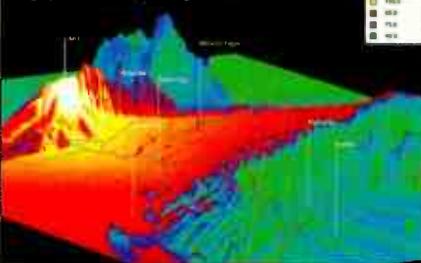
WE EASILY ACCOMMODATE  
COMPRESSED  
TIME-LINE PROJECTS.

Reliable, On-time Installation  
Firm Quotes  
Quality Workmanship



## Broadcast Engineering Propagation Software

Longley-Rice in Hawaii Using Terrain 3D™



Professional software packages for FCC applications and predicting coverage.

- Create stunning "real-world" coverage maps and interference studies using Longley-Rice, TIREM, ITU-R P.1546-1, PTP, FCC and others with Probe 4™
- Search FM channels under spacings and contour protection using FMCommander™
- Prepare AM skywave and groundwave allocations studies and map FCC contour coverage using AM-Pro 2™
- Plot STL paths and coverage over 3D terrain with Terrain-3D™



The leader in broadcast engineering consulting software.

www.v-soft.com 800 743-3684

## FCC Certified FM Stereo Transmitters



GET ON-THE-AIR, STAY ON-THE-AIR!

- ✓ 50W RF output continuous duty!
- ✓ Auto protect, auto soft fail, auto restore!
- ✓ Automatic battery backup!
- ✓ Digital display of all parameters!
- ✓ Simple to install!

What's the bottom line? To stay on the air! The PX50 was designed with that in mind! Auto monitoring of all parameters, with automatic power reduction and restore on VSWR and temperature errors! No more down time AND no more trips to the tower site! Plus the PX50 is FCC Certified under parts 2, 73, & 74 (PF3PX50) and Industry Canada approved (IC: 4318A-PX50) so you never have to worry about non compliance! Make your life easy with the PX50 from Ramsey!



THE ORIGINAL...  
"STATION-IN-A-BOX"

Since the introduction of our "Station-In-A-Box" hundreds have been put in service worldwide!

From temporary locations, rapid deployment installations, to emergency broadcast facilities, there is no quicker way to get on the air!

Custom designs include full audio production and control, record and playback of CD's, CD-R's, MP3's, MD's, and cassettes. Quick deployment antennas with LMR cable make installation a breeze. When you simply have to get on the air anywhere, rely on the proven and original "Station-In-A-Box" from Ramsey!



RAMSEY ELECTRONICS, LLC  
550 Fishers Station Drive, Victor, NY 14564  
800-446-7295 585-924-4560  
www.ramseybroadcast.com

## from MILLIWATTS to KILOWATTS



Transmitting & Audio Tubes  
Semiconductors

Taylor Eimac Amperex MA/Com  
Immediate Shipment from Stock  
Motorola Toshiba Thompson Mitsubishi

• Se Habla Español • We Export

760-744-0700 • 800-737-2787

Fax: 760-744-1943

www.rfparts.com

E-mail:  
rfp@rfparts.com





**Acoustics First**  
-SOUND AND NOISE CONTROL MATERIALS-  
Toll-Free Number: **888-765-2900**  
**www.AcousticsFirst.com**

**RadioMagOnline.com**



**Radio**  
THE RADIO TECHNOLOGY LEADER  
ONLINE RESOURCES FOR RADIO PROFESSIONALS

Find everything *Radio* magazine has available by product category or by section – online.

Developed by the editors of *Radio* magazine, our one-stop categories give you quick access to all the great information you expect from *Radio* magazine. Each one-stop offers Field Reports, technology reviews, features, applications and more.

**Radio magazine one-stops include sections on:**

- Mics
- IP Audio
- HD Radio
- Consoles & Mixers
- Automation
- Streaming
- Codecs

**and more!**

Exclusive sponsorships of *Radio* magazine one-stops are available. Contact your *Radio* magazine market manager today.

**Get your own copy!**

Each month, the *Radio Technology Leader* brings you the latest must-read information about radio broadcasting:

- FCC Update
- Managing Technology
- Trends in Technology
- Facility Showcases
- Field Reports
- New Products
- RF Engineering



**Radio**  
THE RADIO TECHNOLOGY LEADER

To start your own **FREE** subscription, go to **www.myradiomag.com** and complete the online form **TODAY!**

# Radio<sup>®</sup>

THE RADIO TECHNOLOGY LEADER

[www.RadioMagOnline.com](http://www.RadioMagOnline.com)

#### Editorial

Editor – Chriss Scherer, CPBE CBNT, [cscherer@radiomagonline.com](mailto:cscherer@radiomagonline.com)  
Senior Associate Editor – Erin Shipp, [eshipp@radiomagonline.com](mailto:eshipp@radiomagonline.com)

#### Technical Consultants

contact them via [radio@radiomagonline.com](mailto:radio@radiomagonline.com)  
Kevin McNamara, Computers and Networks  
Jeremy Ruck, P.E., RF and Transmission  
Lee Petro, Legal  
Russ Berger, Broadcast Acoustics  
Mark Krieger, IBOC

#### Contributors

Daug Irwin, CPBE DRB AMD; Chris Wygal, CBRE

#### Corporate

President and CEO – Steve Palm  
Chief Financial Officer – Paul Mastronardi  
Controller – Jack Liedke  
Group Circulation Director – Denise Robbins  
Vice President of Web Development – Joe Ferrick

#### Video/Broadcast Group

Executive Vice President – Carmel King  
Vice President of Sales/Group Publisher – Eric Trabb

#### Administration and Production

Editorial Director – T. Carter Ross  
Production Director – Davis White  
Production Publication Coordinators – Karen Lee, Carolina Schierholz  
Advertising Coordinator – Caroline Freeland

#### Circulation

Associate Circulation Director, Audience Development – Tracey Dwyer  
Circulation Manager – Kwentin Keenon  
Circulation Coordinator – Michele Fonville

#### Advertising Sales Representatives

Associate Publisher, U.S. Sales – Steven Bell  
[sbell@radiomagonline.com](mailto:sbell@radiomagonline.com) | 212-378-0400 x519  
Southern Europe, Africa, Middle East – Rafaella Calabrese  
[rcalabrese@broadcast.it](mailto:rcalabrese@broadcast.it) | +39 02 9288 4940  
UK, Ireland, Central and Northern Europe – Graham Kirk  
[gkirk@audiomedia.com](mailto:gkirk@audiomedia.com) | +44 1480 461555  
Japan – Eiji Yoshikawa  
[calls@world.odn.ne.jp](mailto:calls@world.odn.ne.jp) | +81 3 3327 5759  
Asia-Pacific – Wengong Wang  
[wwg@imaschina.com](mailto:wwg@imaschina.com) | +86 755 83862930/40/50

Member: American Business Media

A NewBay Media Publication



NewBay Media, LLC  
28 East 28th Street, 12th floor  
New York, NY 10016

**SUBSCRIPTIONS:** Free and controlled circulation to qualified subscribers. Customer Service can be reached at: [newbay@computerfulfillment.com](mailto:newbay@computerfulfillment.com) or by calling 888-266-5828 (USA only) or 978-667-0352 (Outside US) or write us at Radio Magazine, P.O. Box 282, Lowell, MA 01853, USA. Back issues are available by calling Customer Service.

**REPRINTS:** Call or write Caroline Freeland; 5285 Shawnee Rd., Ste. 100, Alexandria, VA 22312-2334; 703-852-4610; Fax: 703-852-4583.

**PHOTOCOPIES:** Authorization to photocopy articles for internal corporate, personal, or instructional use may be obtained from the Copyright Clearance Center (CCC) at 978-750-8400. Obtain further information at [copyright.com](http://copyright.com).

Copyright 2011, NewBay Media, Inc. All Rights Reserved.

## Contributor Pro-file

Meet the professionals who write for **Radio** magazine.

**This month: Facility Showcase, page 50.**



**Sam Lovato**  
Associate Professor  
Colorado State University - Pueblo

Lovato received his BS from the University of Southern Colorado and his MA from the University of Northern Colorado. Lovato has taught electronic media courses since 1993 and has worked professionally for several radio stations.

He has been the Mass Communications Department's leader in digital audio production and radio station programming strategies, he advises students emphasizing in electronic media.

Lovato has been honored three times by the Broadcast Education Association for excellence in audio production. Sam's academic interests include radio and television programming, social media, FCC regulation, and global communication.

Lovato is the faculty advisor to Colorado State University - Pueblo's award-winning radio station Rev 89. His personal interests include music, collecting, and travel.



Written by radio professionals  
Written for radio professionals

Radio, Volume 17, Number 6, (ISSN 1542-0620) is published monthly by NewBay Media LLC, 28 East 28th Street, 12th floor, New York, NY 10016. Application to mail at Periodical Postage Price is pending at New York, NY and additional mailing offices. Postmaster: Send address changes to Radio, PO Box 282, Lowell, MA 01853.

|                                   | Page Number        | Advertiser Hotline | Advertiser Website           |
|-----------------------------------|--------------------|--------------------|------------------------------|
| Acoustics First                   | 40, 68             | 888-765-2900       | www.acousticsfirst.com       |
| Agilent                           | 13                 | 800-463-9275       | www.newark.com/agilent       |
| AM Ground Systems Co              | 67                 | 877-766-2999       | www.amgroundsystems.com      |
| Armstrong Transmitter Corporation | 42                 | 315-673-1269       | www.armstrongtx.com          |
| Arrakis Systems                   | 31, 36, 37, 41, 71 | 970-461-0730       | www.arrakis-systems.com      |
| Belar Electronics Laboratory      | 63                 | 610-687-5550       | www.belar.com                |
| Broadcast Bionics                 | 47                 | +44 1444 473999    | www.bionics.co.uk            |
| Broadcast Connection              | 43                 | 970-482-9254       | www.broadcastconnection.com  |
| Broadcast Electronics             | 7                  | 217-224-9600       | www.bdcast.com               |
| Broadcast Software Int'l          | 61                 | 888-BSI-USA-1      | www.bsiusa.com               |
| Broadcast Tools                   | 57                 | 877-250-5575       | www.broadcasttools.com       |
| BSW                               | 45                 | 800-426-8434       | www.bswusa.com               |
| BW Broadcast                      | 51                 | 866-376-1612       | www.bwbroadcast.com          |
| CBT Systems                       | 11                 | 858-536-2927       | www.cbtsystems.tv            |
| CircuitWerkes                     | 63                 | 352-335-6555       | www.circuitwerkes.com        |
| Coaxial Dynamics                  | 55                 | 440-243-1100       | www.coaxial.com              |
| Comrex                            | 9                  | 800-237-1776       | www.comrex.com               |
| Continental Electronics           | 32                 | 800-733-5011       | www.contelec.com             |
| Digital Alert Systems             | 40                 | 585-765-1155       | www.digitalalerts.com        |
| Dixon Systems                     | 63                 | 416-261-3773       | www.dixon.com                |
| DM Engineering                    | 64                 | 805-987-0487       | www.dengineering.com         |
| Electronics Research (ERI)        | 44                 | 812-925-6000       | www.ERInc.com                |
| Enco                              | 1, 46              | 800-ENCO-SYS       | www.enco.com                 |
| ESE                               | 52                 | 310-322-2136       | www.eseweb.com               |
| Gorman Redlich                    | 64                 | 740-593-3150       | www.gorman-redlich.com       |
| Harris Corp. Broadcast Div.       | 19, 64             | 800-622-0022       | www.broadcast.harris.com     |
| Henry Engineering                 | 27                 | 626-355-3656       | www.henryeng.com             |
| Inovonics                         | 28                 | 800-733-0552       | www.inovon.com               |
| Jampro                            | 49                 | 916-383-1177       | www.jampro.com               |
| JK Audio                          | 23                 | 800-552-8346       | www.jkaudio.com              |
| Logitek                           | 17                 | 800-231-5870       | www.logitek.com              |
| Mooretronix                       | 65                 | 800-300-0733       | www.mooretronix.com          |
| Music Master                      | 21                 | 800-326-2609       | www.mmmwin.com               |
| Myat                              | 25                 | 201-767-5380       | www.myat.com                 |
| Nautel Electronics                | 3                  | 902-823-5131       | www.nautel.com               |
| Noit Ltd.                         | 64                 | 505-327-5646       | www.noit.com                 |
| OMB Broadcast                     | 59                 | 305-477-0973       | www.omb.com                  |
| Phasetek                          | 66                 | 215-536-6648       | www.phasetek.com             |
| Powergold                         | 55                 | 800-870-0033       | www.powergold.com            |
| Progressive Concepts              | 65                 | 630-736-9822       | www.progressive-concepts.com |
| Qphonics                          | 53                 | +49 89-45672-300   | www.klotdigital.com          |
| Ram Systems                       | 54, 65             | 800-779-7575       | www.ramsystemsonline.com     |
| Ramsey Electronics                | 67                 | 800-446-2295       | www.ramseybroadcast.com      |
| RF Parts                          | 67                 | 800-737-2787       | www.rfparts.com              |
| RVR USA                           | 38                 | 877-902-3669       | www.rvrusa.com               |
| Sage Alerting Systems             | 42                 | 914-872-4069       | www.sagealertingsystems.com  |
| Sandies                           | 62                 | 215-547-2570       | www.sandies.com              |
| SCMS                              | 30                 | 800-438-6040       | www.scmsinc.com              |
| Shively Labs                      | 29, 66             | 888-744-8359       | www.shively.com              |
| Sine Systems                      | 53                 | 615-228-3500       | www.sinesystems.com          |
| Superior Electric                 | 47                 | 800-787-3532       | www.superiorelectric.com     |
| Telos Systems                     | 33, 35, 39         | 216-241-7225       | www.telos-systems.com        |
| The Studio Hawk                   | 66                 | 662-324-2769       | www.thestudiohawk.com        |
| Thermobond Buildings              | 66                 | 800-356-2686       | www.thermobond.com           |
| TieLine Technology                | 5                  | 317-845-8000       | www.tieline.com              |
| Transcom Corp.                    | 66                 | 800-441-8454       | www.framatv.com              |
| V-Soft Communications             | 67                 | 800-743-3684       | www.vsoft.com                |
| Wheatstone                        | 2, 72              | 252-638-7000       | www.wheatstone.com           |
| Wide Orbit                        | 15                 | 281-252-8891       | www.wideorbit.com            |
| Yellowtec                         | 34                 | +49 2173-967 30    | www.yellowtec.com            |

This index is a service to readers. Every effort is made to ensure accuracy, but Radio magazine cannot assume responsibility for errors or omissions.



by Erin Shipps, associate editor

## Sample and Hold Radio listenership

Arbitron released cumulative audience estimates for the 56 RADAR-rated networks. RADAR 108 estimates illustrate network radio's continued strong listener base. Compared to the Arbitron estimates

from one year ago, network radio increased its weekly reach among persons aged 12 and older by more than 3.5 million listeners.

Source: Arbitron

| Demographic  | RADAR 104<br>(March 2010) |                 | RADAR 108<br>(March 2011) |                 | Change (000) |
|--------------|---------------------------|-----------------|---------------------------|-----------------|--------------|
|              | Reach<br>(000)            | Reach<br>rating | Reach<br>(000)            | Reach<br>rating |              |
| Persons 12+  | 189,550                   | 73.7            | 193,143                   | 74.4            | 3,593        |
| Adults 18+   | 172,385                   | 74.1            | 175,487                   | 74.8            | 3,102        |
| Adults 35+   | 119,399                   | 73.8            | 121,038                   | 73.9            | 1,639        |
| Adults 18-49 | 102,834                   | 76.1            | 104,483                   | 77.4            | 1,649        |
| Adults 25-54 | 97,086                    | 76.6            | 98,491                    | 77.6            | 1,405        |

## Public radio listeners' media usage

The results of a national Web poll survey, conducted in partnership between Jacobs Media and the Public Radio Program Directors Association (PRPD), consisting of more than 21,000 respondents from more than 40 public radio stations across the United States shows an impressive trend of media usage and gadget acquisition from texting to ownership of eReaders and iPad. Some key findings include:

Public radio listeners have to be the best educated on the planet. Eight in 10 have a college degree. And nearly half hold a graduate degree.

More than one-third of PRTS3 respondents now own a smartphone, up 29 percent from last year's study.

Pandora makes its first ever appearance in this study. One-fourth of public radio survey takers listen to Pandora monthly or more.

In the past year, six of every 10 PRTS3 respondents say they have downloaded and listened to a podcast.

Internet radio streaming shows impressive gains. Four in 10 PRTS3 participants listen to streaming audio at least weekly, up 17 percent from last year's survey.

Last year's big headline was about social media. And while momentum has slowed, nearly two-thirds of PRTS3 respondents now have a profile. Facebook and LinkedIn are the big gainers, while MySpace's share has actually decreased.

Texting continues to grow, even among Classical music fans. Among the total sample, more than four in 10 participants text weekly or more.

Finally, HD Radio ownership continues to rise. Overall, 6 percent say they have an HD Radio, up 22 percent from last year. On the other hand, satellite radio has plateaued at 13 percent, similar to PRTS2 levels.



Source: Jacobs Media Public Radio Tech Survey 3

# ARRAKIS SYSTEMS INC.

**MARC-15-15**  
on sale \$6,499



15 channel modular console  
supports two phone hybrids  
USB sound card modules  
control room & studio

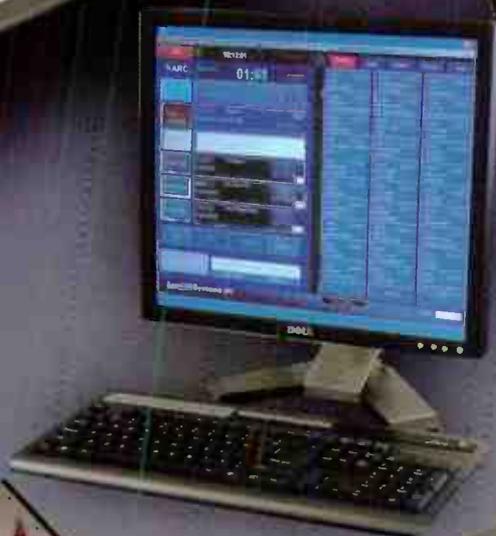
**ARC-8**  
only \$799



2 mic, 4 stereo line,  
PC USB, and Phone input  
both balanced & unbalanced I/O

**XTREME**  
automation  
only \$100  
per month

Live On Air,  
Hard disk & Satellite,  
16 stereo input switcher  
with logic.



**ARC-15**  
only \$3,495

**ARC-10**  
three models



1-5 mic inputs,  
PC USB, and Phone inputs  
both balanced & unbalanced I/O

ARC-10U: \$1,599 unbalanced  
ARC-10UP: \$1,999 unbal w USB  
ARC-10BP: \$2,495 balanced w USB

2 mic inputs,  
PC USB, and Phone inputs,  
both balanced & unbalanced  
models.

**'ACCENT'**  
studio furniture



**25% off**

all ARC consoles  
(except ARC-10U) feature built in  
PC USB sound cards and come with  
'Xtreme -Studios' live on air software

**'Pre-End of the World Sale'**  
the Mayan calendar predicts the end of  
the world in 2012... so Accent Furniture  
is 25% off until Dec 31st, 2011

ACCENT is a contemporary blend of brushed metals, pleasing colors, and interesting textures. The metal structure is artfully integrated into the visible design decor of the cabinetry. Cabinetry and electronic equipment complement each other to create a bold visual environment for talent, guests, and clients alike.

[www.arrakis-systems.com](http://www.arrakis-systems.com)

all prices are msrp

# SOUND:REAL

**“With the AirAura, THUNDER sounds more thunderous...”**

It's not often that management and engineering are in total agreement. It's even more unusual when the top dog is a CPA who is the GM AND the CFO. That's Richard T. Morena, Principal of Press Communications, LLC. He and George M. Kowal, his Assistant Chief Engineer, see eye to eye (or ear to ear) when it comes to their on-air sound. Press Communications, LLC is located in Arbitron Market #51 and broadcasts on the simulcast 106.3FM/106.5FM (THUNDER 106) from Atlantic City to NYC. That's why they've got a pair of Vorsis AirAura processors taking care of business at THUNDER 106.

“Sure, WE can hear the difference immediately. But when our LISTENERS call to tell us how great we sound, we know we're onto something big. With the AirAura, THUNDER sounds more thunderous and THAT is something that really shakes up our bottom line,” says Richard Morena. “We LIKE that!”



Learn how AirAura can add a bit of thunder to your station.  
Contact Vorsis today and shake up YOUR bottom line.

#### Exclusive Vorsis AirAura® Audio Processing Technology:

- + AirAura Distortion-Managed Final Clipper
- + Fine Grain Processing
- + Sweet Spot Technology
- + Vorsis Bass Management System - v2.0
- + Smart Stereo Enhancement

WHEATSTONE  
**VORSIS**

Phone 1.252.638-7000 | vorsis.com | sales@wheatstone.com

**AIRAURA**  
SUPER DIGITAL AUDIO SPECTRAL PROCESSOR  
YOUR ON-AIR SOUND IS ABOUT TO GET AWESOME