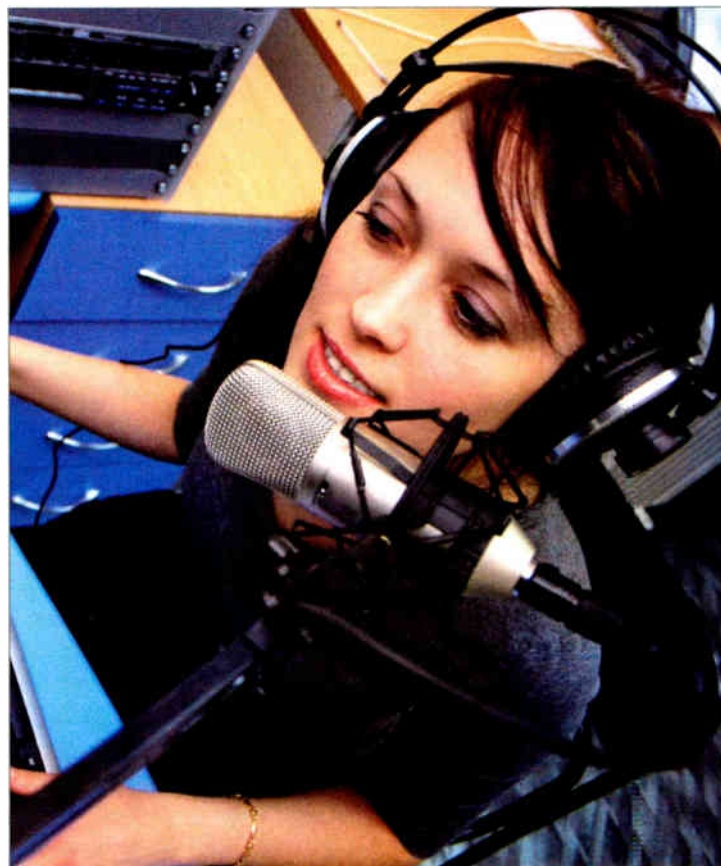




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World Radio History



Company: **Rushworks**  
 Product: **VDesk Radio/TV Software**



Photo by Bill Peck

This tool can help you turn your radio station into an Internet TV station.

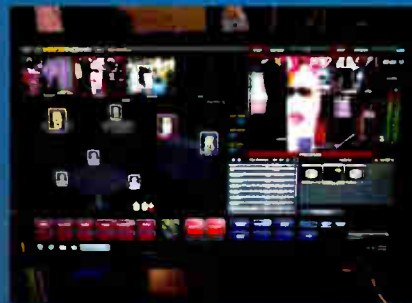
The system includes two moveable cameras and one fixed camera with a wider lens that covers the entire studio as your "wide shot." But it's more than that. When you purchase the system, you provide Rushworks with a picture of your studio. In the software, they create a dimensional grayscale rendering as a virtual "stage" for your touchscreen show production, a room that emulates your studio. They define your team members (for instance, your air talent or guests), using picture icons with names and titles, and position them in the respective places in the virtual set.

You use a joystick to frame shots the way you want, then click Save. Then whenever you touch a picture icon or other element, the camera will go to that preset and automatically take the shot, and fade on a title if you wish.

Features include a big touchscreen monitor for the control room, a 10-inch monitor for the show host, "pan-tilt-zoom" camera control with joystick, four synchronized video inputs, video transitions (dissolve, wipes, slides etc.), multi-layer graphics, animated overlays, build-in streaming and other cool stuff. Retail price \$13,995 including cameras.

There's a demo video at the website that walks you through the concept. Shown above are Mike Garza, Cam Emerick and friend.

Info: [www.rushworks.tv/vdesk\\_rtv.html](http://www.rushworks.tv/vdesk_rtv.html)



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Company: **Electronics Research Inc.**  
 Product: **788 Series All-Pass FM Analog/HD Radio Diplexer**



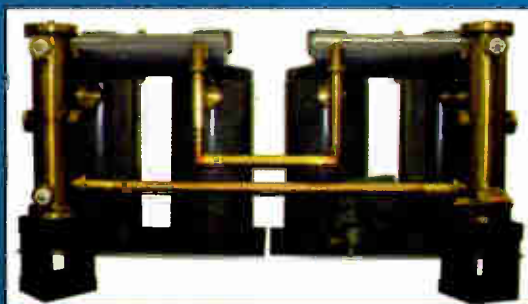
Photo by Bill Peck

ERI says its new high-level diplexer does not have the high insertion loss associated with 10 dB hybrid injectors, thus it's more efficient with analog and digital power. The system gives an FM station that is operating a -20 dBc digital signal with a 10 dB hybrid injector the opportunity to increase digital power without having to invest in a new transmitter.

The diplexer is rated for up to 30 kW analog and 5 kW digital input power. All-pass analog insertion loss is -0.35 dB or less, digital loss is -1.4 dB. Group delay performance is better than other high-level combining methods, ERI says, and is "readily correctable by currently available FM transmitters." Group delay of the analog signal is less than 350 nanoseconds; digital delay is less than 600 ns.

A typical package, including field setup, goes for about \$58,000. ERI's Bill Harland, left, accepts congrats from Radio World's Paul McLane.

Info: [www.eriinc.com](http://www.eriinc.com)



# Radio, Everywhere and on Everything

## Radio Navigates an Environment of 'Rapid Development and Constant Deployment'

*Did you catch our webinar "25 Things You Might Have Missed at NAB"? I highly recommend it. It's a full hour of industry trend discussion and product coverage from five Radio World editors, all free thanks to our sponsors Harris and Nautel.*

*Among the topics were the following. Find a link to the webinar at the end.*

A major theme for industry leaders is that radio and TV stations need to be available on mobile phones, tablets, laptops and game consoles.

Along those lines, I like the annual "Tech Survey" from Jacobs Media, which offers a snapshot of the behavior of radio listeners using input from 57,000 people.

The first graphic shows "media usage." As you see near the base of the pyramid, terrestrial radio remains a huge part of listeners' lives, with 92 percent using the medium an hour or more a day (though this is somewhat self-fulfilling, since the survey is of radio listeners to start with).

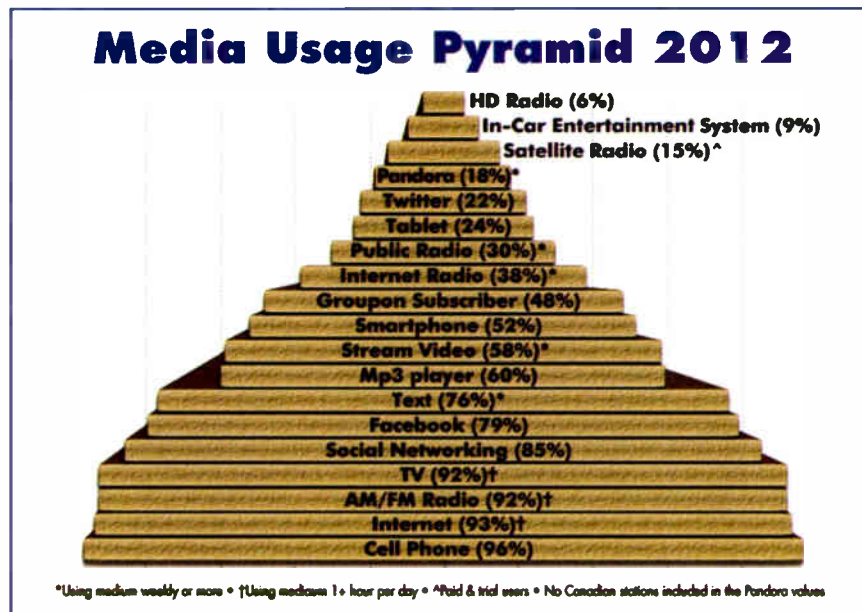
Certainly though Internet radio is taking a bigger role; and Pandora is the most popular "pure" Internet option, easily besting competitors like iHeart-Radio, Spotify and Slacker. There is quite a debate about whether Pandora should even be considered "radio" but regardless, it is attracting ears. HD Radio continues to have a small footprint by comparison.

But without doubt, one big battleground for radio is the car. More than half of the respondents say that most

of their radio listening takes place in cars; yet almost half say they're able to connect a smartphone or MP3 player

why some companies are trying to figure out whether to do the same thing or keep waiting, or even partner up online with competitors.

Jacobs says its results suggest that radio needs to focus "on connecting emotionally and meaningfully with listeners."



Jacobs Media's study shows the 'digital landscape' that radio managers must navigate.

there; and one in 10 now has an "infotainment" system like Ford's Sync, a number that will grow quickly.

This is the background against which traditional broadcasters and new types of "radio" will be duking it out. Where does traditional radio fit in the new dashboard? It's why entities like Clear Channel, ESPN and NPR have invested so much time in online apps, and it's

## FROM THE EDITOR



Paul McLane

Here are some relevant comments from the Broadcast Engineering Conference keynote address by Kevin Gage, executive vice president and chief technology officer of NAB:

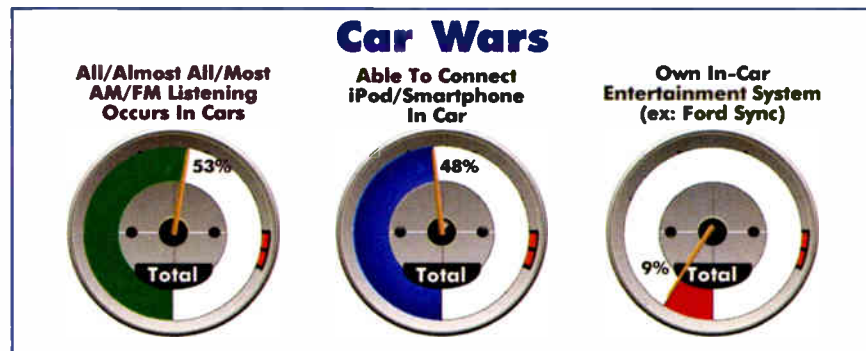
"Whether it is software — or, as Apple has proven, hardware — we are now operating in an environment of rapid development and constant deployment," Gage told the gathered engineers.

"With this perspective, it becomes clearer that success today requires the ability to navigate the rapidly changing consumer environment and provide services and goods that meet their needs ...

"By some analysts' projections, by 2015 there will be hundreds of millions of Wi-Fi only tablets in the market ... hundreds of millions of devices that cannot truly receive content in a mobile environment that fits the consumer's lifestyle. I see an opportunity.

"We have the opportunity to untether consumers from the Internet and to offer

*(continued on page 14)*



The battle for drivers' attention is likely only to grow more fierce.

## Introducing the 788 Series

Efficient High Level FM Analog/IBOC All Pass Diplexer \* —

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\* Patent Pending

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JUNE 6, 2012

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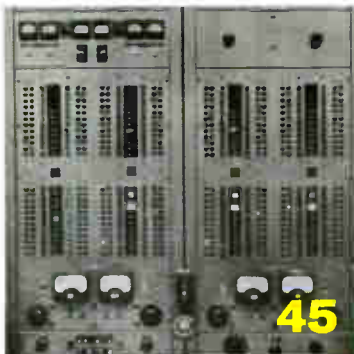


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Company: **Inovonics Inc.**  
Product: **INOMini 632**

Here's an FM and FM/HD Radio receiver for off-air confidence monitoring

The box receives analog FM broadcast transmissions as well as FM/HD Radio digital broadcasts transmitted by your HD1 through HD8 auxiliary digital broadcast channels. Analog FM and HD Radio digital programs are accompanied by digitized text and housekeeping data. FM RDS and HD Radio program-associated data are shown on the LCD display, along with read-outs of signal quality info.

Even when you set the 632 to receive HD Radio broadcasts, it will not automatically revert to analog FM reception if digital signal or power is lost.

A custom mounting rack can hold up to three INOMini series modules in a 1U space. Price: \$850.

That's Ben Barber, Jim Wood and Lukas Hurwitz in the photo.

Info: [www.inovon.com](http://www.inovon.com)



Company: **Staco Energy Products Co.**  
Product: **FirstLine BMS**

The Staco FirstLine BMS Battery Monitoring System monitors UPS batteries. And, it's wireless. The system measures and records battery cell voltage, battery string voltage, battery string current, battery room temperature, battery cell impedance and battery terminal temperature. Info is displayed with curves and bar graphs on an LCD touchscreen.

Thanks to the wireless design, the company says, it can be installed in half the time with less cost than traditional, wired monitoring systems. Useful for mission-critical data centers. Typical configurations cost \$3,000 to \$10,000.

Getting juiced about their award are Jim Hall, Paul Heiligenberg and Miguel Rivera.

Info: [www.stacoenergy.com](http://www.stacoenergy.com)



**DaySequerra**



Selected content from Radio World's "The Leslie Report" by News Editor/Washington Bureau Chief Leslie Stimson.

## DOYLE: DON'T COUNT ON WAIVERS

**WASHINGTON** — Several steps must take place before the FCC can process thousands of pending FM translator applications and then open an LPFM application window. Meanwhile, broadcasters have expressed opposition to some of the plans the commission has already laid out.

The FCC has received some 1,500 comments so far on its early steps to navigate competing spectrum demands of FM translators and LPFMs.

Most comments are from LPFM proponents. But some came from full-power broadcasters who ask why thousands of FM translator applications must be dismissed. They say it's not clear that this would make room for new LPFMs in the top 150 markets.

At an informal briefing I attended recently at the FCC's headquarters, FCC Audio Division Chief Peter Doyle, explaining the agency's recent deci-

sions, said, "We've tried to respond to the criticisms. We're confident we can carry this out, but I am concerned about the complexity."

The goal, he said, is to preserve remaining allocation availabilities for both FM translators and LPFMs.

The point of the meeting was to give guidance to consulting engineers and communications attorneys to help their clients decide which pending FM translators to pursue. The Association of Federal Communications Consulting Engineers and Federal Communications Bar Association had pressed for the gathering.

The commission has adopted a national cap of 50 applications per entity and a market cap of one application per entity in the most "spectrum-limited markets."

Doyle warned attendees not to look for exceptions. "Standards for waivers are extremely high. We need to keep this process moving forward."

The Audio Division is working on a Federal Register notice about the caps. Once that's complete, staffers will

put together a notice containing due dates for oppositions and reply comments, according to division staff.

Much of the meeting centered on how to use the commission's radio market "grid tool" (to me it was like a painful review of high school algebra; if you asked me how it works, I could not say). Attorneys and engineers will use the grid tool to obtain allocation information for clients' FM translator allocation applications. The agency has a tentative timeline for processing those applications.

Under this timeline, the FCC first will make selections based on criteria including whether your translator choice is in a spectrum-limited or non-spectrum limited market.



Audio Division Chief Peter Doyle, left, and Division Deputy Chief of Engineering Jim Bradshaw

Photo by Leslie Stimson

The FCC expects an LPFM application window to open in the spring or, more likely, summer of 2013. However that's still a real guesstimate. The commission needs to adopt final technical standards for LPFM first. "Until we have those we can't talk about a window," said Jim Bradshaw, deputy chief of engineering for the Audio Division.

(continued on page 8)

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### Company: **Wheatstone** Product: **LX-24 Wheatnet-IP Audio Control Surface Console**



A unique meter bridge is but the most eye-catching feature of this new offering from Wheatstone.

The LX-24 is a modular console with a very low profile, designed for use with Wheatstone's WheatNet-IP network. It's thin enough that you need not cut a hole in your counter.

A console Blade provides the audio mix functionality and basic I/O; more Blades can be added for more inputs/outputs in various digital and analog configurations. Each input channel features four stereo bus assign; four pre-fader aux sends; four mix-minuses; source name display; A/B source selector; and two programmable buttons. Other features include digital timer; control room and headphone outputs; and stereo cue.

The lovely meter bridge has four sets of bright LED meters with a distinctive design, plus LED displays for aux levels and pan control. Hard to take your eyes off 'em. Pricing starts at about \$15,000 and depends on configuration.

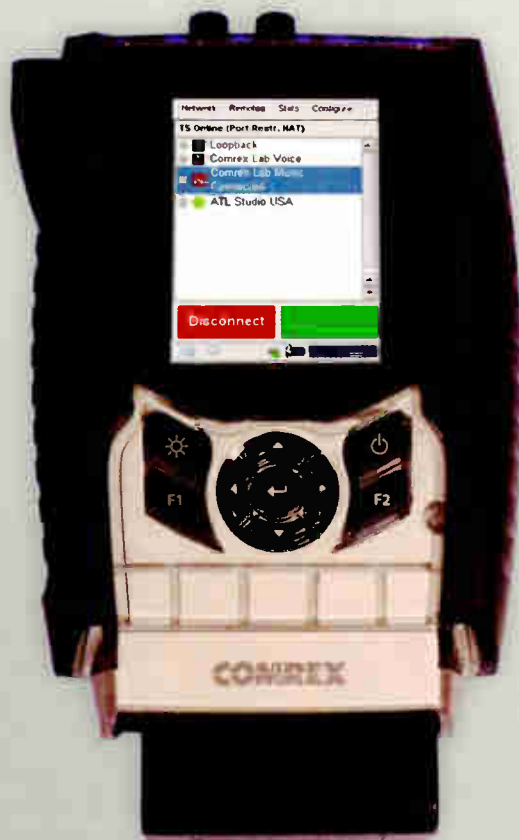
Shown harvesting the wheat are Darrin Paley, Phil Owens, Jay Tyler and Steve Dove.

Info: [wheatstone.com](http://wheatstone.com)



Photo by Jim Peck

**THIS CODEC HAS BEEN THROUGH  
TWO WARS, MULTIPLE ELECTIONS,  
FLOODS, FAMINE, EARTHQUAKES,  
HURRICANES, MARATHONS,  
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World Radio History

## FM TRANSLATORS

(continued from page 6)

Engineer Charles Cooper of duTreil, Lundin & Rackley was among those who sought the meeting. Both he and Troy Langham, senior FCC engineer at Clear Channel, said the gathering was helpful and will lead to more questions as stations begin to sort through tough decisions about which translator applications to pursue.

The commission's anti-collusion rule will be in effect when broadcasters make these decisions. That rule essentially will prevent applicants in a given market from talking to one another and making deals to coordinate dismissal of their applications. Broadcasters had hoped the FCC would waive that restriction.

I asked Doyle about that; he said the issue had been raised but the commission left the rule in place, to be lifted only during a designated settlement period.

Under its draft timeline, the commission hopes to begin its cap compliance/dismissal process this summer. However the cap decision itself is under question. Four petitions for reconsideration have been filed, which could delay application processing.

The petitions come from broadcasters with translator applications, including Educational Media Foundation, which has several hundred. The broadcaster calls the caps "arbitrary" and says the FCC should clarify certain points before any applicant must designate Auction 83 applications for dismissal. EMF asked the FCC to clarify what constitutes a radio market for the purposes of the cap.

Conner Media said its purpose in filing multiple applications within the same markets "was a rational means of providing meaningful service to the most heavily-populated portions of the market that would derive the greatest benefit from such service. A single translator could not possibly suffice to serve such a market." Its comments were written by attorney Peter Gutmann of Womble Carlyle.

Conner asked the agency to reconsider the one-to-a-market cap, or at least to apply the cap per community of license rather than per market.

Oppositions to these petitions must be filed within 15 days of Federal Register publication to Docket 99-25.

Meanwhile, Audio Division staffers say that broadcasters should be ready so that when a cap dismissal window opens, they can file for the translator applications they wish to pursue on the first day.

Recalling a case in 2003 when the FCC's computers were overwhelmed by thousands of filings, Bradshaw said the servers have been improved. "If there is some kind of issue, if a problem prevents [you] from filing, we can extend the window" in a worst-case scenario.

And what of those who lose out in this go-round? They can reapply for an FM translator in the next window, which would come after the LPFM window, according to FCC staff. That's likely to be 2014 at the earliest, if the tentative timeline holds.

This was a hard pill to swallow for broadcasters who have been waiting since 2003, several people in the room told me.

## NEWSROUNDUP

**PANDORA I:** "We have the audience to massively disrupt this market," says Pandora Chair/CEO Joe Kennedy. The key is to make Pandora as easy an ad buy as traditional radio, Kennedy told Wall Street analysts in May. A big step for the Internet audio music service to make inroads in local and national ad buys is third-party audience measurement. Pandora recently announced a deal with Triton Digital. It will use AQH statistics along with Webcast Metrics in client reports, making its measurements closer to what advertisers and their agencies are used to seeing when planning buys on traditional radio.

**PANDORA II:** The Internet audio service has been focused on beefing up its sales staff, often by hiring personnel who have AM/FM selling experience. "They see Pandora as the future of radio and the future of radio advertising," says Chair/CEO Joe Kennedy. Pandora had 568 employees in the first quarter, compared to 359 a year earlier. In the top 10 markets, the Internet audio music service has five or six sales people to a market.

**CES:** The Consumer Electronics Association, which holds the annual International CES show, says an independent audit confirms CES' status as North America's largest annual tradeshow. Veris Consulting audited attendance and other figures for this year's convention, held Jan. 10-13, in Las Vegas. Overall attendance was about 156,000. Some 3,300 exhibitors were at the event, a 22 percent increase over last year's show, according to the results. Next year's CES is slated for Jan. 8-11.

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*Telos*

[Telos-Systems.com/ProStream/](http://Telos-Systems.com/ProStream/)

Omnia A/XE:  
Internet streaming in a server.



Obviously, the correct answer is *software*, with the power to stream multiple channels from a single PC. Meet Omnia A/XE, the professional all-in-one software solution for Internet streaming.

Omnia A/XE can turn a couple of lonely servers into a supercharged streaming network. It runs in the background as a Windows service and can process and encode multiple streams in various formats simultaneously. Just hook up your audio, choose a bit rate and processing preset, select your Shoutcast or Wowza server, and *Voila!* Streaming audio, simple as A, B, C.

And that audio packs the clean, clear competition-crushing punch Omnia is famous for. Each stream is sweetened with its own adjustable wide-band AGC with three-band compressor/limiter, EQ and low-pass filter, and precision look-ahead final limiter. The result: clean, clear streams with more presence and character than you ever thought possible.

*Omnia*

[OmniaAudio.com/AXE/](http://OmniaAudio.com/AXE/)

World Radio History

# 1 WTC

(continued from page 1)

State Building for new rooftop digs or if they will treat the 1 WTC spire primarily as a backup site.

Durst expects its new broadcast center at 1 WTC to generate more than \$10 million in rents and fees from broadcasters annually. Upfront capital costs to build the antenna are projected to be approximately \$7.4 million, according to the developers. Projected total cost for the new building is now estimated at \$3.9 billion, according to the NY Daily News.

Durst also operates rooftop broadcast facilities atop 4 Times Square in midtown Manhattan. The development firm is promoting the 1 WTC antenna as the city's premium broadcast antenna platform. It plans to market both its locations to broadcasters with 1 WTC serving as a primary site with redundant power and 4 Times Square as backup, Durst stated in a press release.

A spokesman for Durst declined to say whether an engineering study has been ordered or completed. As of May, it was not clear whether Durst had begun contacting radio or television broadcasters about the new broadcast facility.

Work on the skyscraper, sometimes referred to as the Freedom Tower, began in 2006 and now is expected to be completed by late 2013 or early 2014. Once finished, 1 WTC will be the tallest building in the Western Hemisphere by pinnacle height, and the third-tallest building in the world, according to Durst.

The Empire State Building, 1,250 feet tall with a 204-foot antenna, is home to 19 FM stations — 14 on the master FM antenna — and most of the city's digital television transmitters. Many radio and television broadcasters migrated to Empire after the collapse of the World Trade Center's twin towers in the attacks on Sept. 11, 2001. The former WTC's North Tower featured a 360-foot broadcast mast.

A report in the Wall Street Journal said the Empire State Building generated \$16.1 million in rent from broadcasters in 2010, according to securities filings with the SEC. Malkin Holdings, owner of the Empire State Building, did not respond to messages left by Radio World for this story.



The Durst Organization plans to add an installation for FM radio and television antennas — a 408-foot spire atop the building, which is still under construction.

since 1979, most recently as director of broadcast operations and engineering for CBS Radio. He speculated that 1 WTC could interest broadcasters as a backup site. "Empire right now is the better site because of the allocations, and it is centrally located in the market," said Olkowski.

The Empire State Building's rooftop facilities include nearly every radio and television broadcaster in the city. It's long been rumored that the master FM antenna tower on Empire eventually will need to be re-built. Olkowski said he's aware of no imminent plans to do so. The Empire State Building also has what is referred to as the "mini-master" antenna, which replaced three separate panel antennas in 1996. It is home to WQHT(FM), WCBS(FM) and WPLJ(FM).

"Empire has been the only player in town for over a decade. I believe competition is a good thing. The new tower will give broadcasters more options. That's always good," Olkowski said. He reported that Clear Channel and CBS currently are rebuilding some of their facilities at Empire.

A spat between the owners and the developer vs. the architect has raised the question of whether the building when finished really would be the tallest building in North America.

## WAIT & SEE

Jim Stagnitto, director of engineering for New York Public Radio, said he believes broadcasters transmitting signals from Empire will take a wait-and-see stance on 1 WTC.

"For example, I have not yet seen any engineering studies or financial proposals to present to my managers. Both would have to be compelling before a move downtown would be considered," said Stagnitto. He also serves on the executive committee of the FM Master Antenna Group at Empire.

He pointed to possible short-spacing issues for some broadcasters as a negative for the new rooftop facility at 1 WTC.

Mark Olkowski, a veteran New York broadcast engineer and former chair of the FM Master Antenna Group at Empire, said, "For broadcasters to have all of their eggs in one basket at Empire is not necessarily a good thing, especially considering what happened 11 years ago. However, I don't think anyone is all that excited about moving."

"The allocation is so tight that it is very difficult to move around. So you have spacing issues. The expense of moving is another consideration," said Olkowski.

He estimated that to move a single



Two memorial pools take up the footprints of the destroyed WTC Towers 1 and 2.

FM transmission facility could cost \$1 million per station or more. Then there are the buy-in fees and rent that would be charged by Durst, making it "a very expensive decision."

The last buy-in to the Master FM Antenna Group at the Empire State Building was \$660,000, according to Olkowski. "So when you add up all of the hardware and buy-in, you could be easily at \$2 million per station or more."

Olkowski has worked in the market

The architect, Skidmore Owings & Merrill, originally planned to enclose the antenna with an ornamental shell. The owners and developer intend to drop the shell to save \$20 million, the Wall Street Journal reported recently.

When calculating building height, architectural spires are included; antennas are not. The owners say the antenna in this case is a spire; the city, which is the final judge in this case, had not ruled on the issue in May, the paper reported.

# ROC YOUR WORLD



## The new ROC console from Logitek

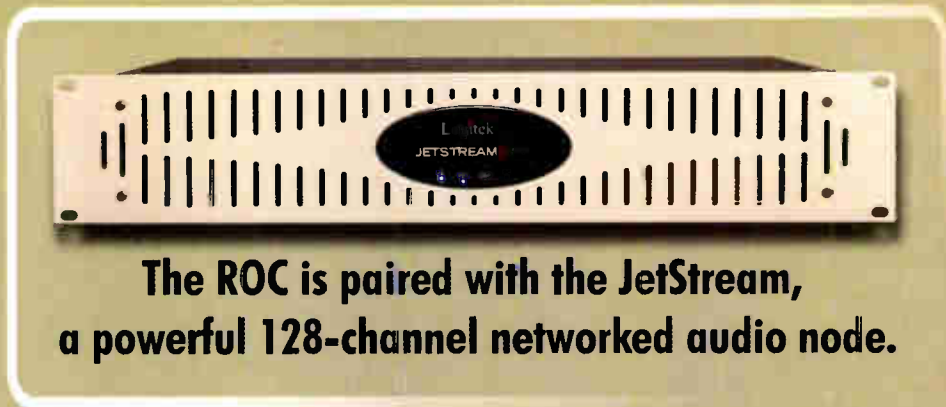
When Logitek introduced its first ROC console back in the 1990s, it marked a revolution in audio console design. One of the industry's first router-based digital consoles, the original ROC boasted simple wiring and access to multiple sources at each fader.

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

Available in multiples of 6 faders (up to 24), the ROC is housed in an attractive tabletop enclosure.

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## 'The Narrator' Ships in July

Unit Is First 'Talking' HD Radio Receiver For Visually Impaired

**MINNEAPOLIS** — Best Buy expects to ship its Insignia Narrator in July. The unit is a HD Radio tabletop receiver designed with the visually impaired in mind.

The Narrator was conceived with input from the International Association of Audio Information Services, a group that represents radio reading services.

The unit is unusual in that it's designed for both sighted and visually-impaired users, according to Best Buy and iBiquity Digital. Among its special features is that it "talks," offering audible voice prompts and responses. It's also the first Insignia-brand HD Radio to include AM.

"With The Narrator coming to market, people with visual disabilities will have a radio that they can program and tune themselves," said Dave Noble, chairman of government relations for IAAIS.



For years, visually impaired listeners have had to use single-purpose, expensive SCA receivers that generally offered lower-quality audio but gave them access to content specifically broadcast for them over subcarriers of FM stations. The IAAIS has pushed for an HD Radio receiver designed with low- or blind users in mind so those listeners could have a "regular" radio, one that also provides access to programming of radio reading services, in this case via digital multicasts.

The buttons on the unit are larger than normal, with raised lettering. The units are shipped with the accessible mode as the default, so when a blind or visually-impaired purchaser turns it on, he or she is prompted to tune the radio with voice commands, said Best Buy Senior Product Manager Mike Dahnert.

A sighted user can turn off the accessible voice command feature. This is also the first HD Radio tabletop receiver that supports Artist Experience, in which the audio is synched with visual images.

Best Buy began taking pre-orders in May. Attendees of the IAAIA annual conference being held in Houston during that month got a pre-order price of \$89, according to Dahnert, who said the regular pre-order price would rise to \$99.

The unit is available for purchase at [www.bestbuy.com](http://www.bestbuy.com).

— Leslie Stimson

## NEWSROUNDUP

**PUBLIC FILE:** Pacific Empire Radio Corp. is facing a possible \$25,000 fine for public file violations. The licensee had 30 days to certify it's now in compliance with inspection file rules at five stations in Oregon. The stations are KLBK(AM) and KUBQ(FM), La Grande; KBKR(AM) and KKBC(FM), Baker; and KRJT(FM), Elgin. Pacific Empire told the commission the missing issues/programs lists were an inadvertent omission "due to the lack of transparency between new management and outgoing management." Pacific Empire said it was updating the lists and had developed a timeline to finish by mid-October.

**PUBLIC RADIO INTERNATIONAL:** PRI received a two-year, \$1.6 million grant from the Bill and Melinda Gates Foundation to lead initiatives concerning global health issues and development. Building on the base of global health and development content produced by its daily news magazine "PRI's The World," a co-production of PRI, the BBC World Service and WGBH Boston, the Minneapolis-based public radio program producer and distributor says it will use the grant to extend the program's reach and coverage.

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**MCLANE***(continued from page 4)*

high-quality video and audio directly to mobile phones, tablets and laptops. We have the opportunity to deliver data directly to portable devices, relieving the load on carrier networks while speeding up distribution of time-critical information. We have the opportunity to create exciting new services, based on our one-to-many architecture, and distribute these new services directly to consumers.

"To state it bluntly, broadcasters must become proactive and take the lead in forging their future, or someone else will."

He said NAB is helping through its creation of NAB Labs, on which we've reported, and he laid out the goals for that organization.

A slightly different perspective comes from Radio World contributor Cris Alexander, director of engineering for Crawford Broadcasting. For the webinar, I asked him what consumer or technology trends he thinks are most on people's minds.

"It seems that everyone is concerned about Pandora and other online streaming services, and perhaps that is justified to a degree," he said.

"But in my opinion, the amount of available RF bandwidth cannot sustain the one-to-one model that streaming uses beyond a certain number of listeners.

"We have experienced that ourselves with audio-over-IP products ... While these may work perfectly over 3G or 4G during off-peak times, when the remote venue is full of people, we cannot get a reliable connection in many cases. I have heard anecdotal reports of the same kind of thing for in-car streaming during peak times.

"As these devices (especially in-car wireless) continue to proliferate, the problem will only get worse. This is where the broadcaster's one-to-many model shines, and along with unique and relevant content, we have to capitalize on that."

What do you think the future holds for radio in the world of broadband, mobile proliferation and the glass dashboard? Write to [radioworld@nbmedia.com](mailto:radioworld@nbmedia.com).

Those are just a smattering of comments from the webinar. Please watch and let me know what you think. Click on Digital Editions under the Resources tab at [radioworld.com](http://radioworld.com).



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**NEWSROUNDUP**

**ZONECASTING:** Some small stations and advertisers seem open to a concept floated by Peter Handy of GeoBroadcast Solutions to use FM boosters to vary a station's ads or other content based on listener location. The approach, using GBS "zonecasting" technology, would transmit that content to specific areas of a broadcast market using single-frequency networks and multiple Harris transmitters. A rule change would be needed to allow boosters to originate their own programming; Handy petitioned the FCC in April to make that change. Brian McNeill of Alta Communications, a broadcast banker and private equity investor, states in comments filed to RM-11659: "If a retailer can now buy commercials that specifically target the areas ... which their customers come from, I would think that the likelihood of their ad campaigns being successful would be greatly increased."

**RADIO TODAY:** "Americans spend most of their audio entertainment time with radio." That's one of the data points that Arbitron is trying to help radio get across visually. Among the goals: to help "broadcasters tell radio's compelling story." Among other findings from various data sources: Radio is the primary medium for fast food patrons during lunchtime; consumers tune to radio during prime shopping hours; and Americans listen to radio for 14.6 billion hours each month.



**PUBLIC SAFETY:** With the June 30 CAP deadline approaching, the FCC's Public Safety & Homeland Security Bureau, which governs EAS, has a new bureau chief. Communications attorney David Turetsky was to start his new job after Memorial Day. He comes from Dewey & LeBoeuf, where he was a partner. Turetsky

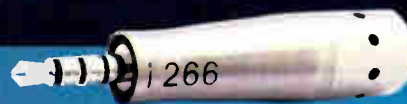
replaces Jamie Barnett, who left the post at the end of April to return to the Potomac Institute for Policy Studies, a science and technology think tank. Stations must have Common Alerting Protocol-compliant EAS gear in their stations by the end of June.

**EAS:** FEMA's Integrated Public Alert and Warning System, the National Alliance of State Broadcasters Association and the NAB collaborated on a webinar aimed at helping broadcasters prep for the June 30 deadline. That's when stations must have operational Common Alerting protocol EAS gear at their station. The webinar, called "Getting Ready for CAP: Countdown to June 30," Topics include what broadcasters need to know to make sure their encoders/decoders are prepared to receive alert messages in Common Alerting Protocol, said FEMA IPAWS Senior Program Manager Manny Centeno. EAS device configuration and parallel operation of the EAS using traditional monitoring and CAP were up for discussion. To download, go to: [www.fema.gov/emergency/ipaws/](http://www.fema.gov/emergency/ipaws/)

**NEW FCC COMMISSIONERS:** After nearly a year the FCC now has a full complement of five commissioners; Jessica Rosenworcel and Ajit Pai began working at the Portals in May. Rosenworcel, a Democrat, takes the seat held by Michael Copps. Pai is a Republican who takes the seat vacated last spring by Meredith Baker. Both pledged to promote competition and innovation in the communications marketplace that will work for the benefit of all consumers.

**BBG:** S. Enders Wimbush stepped down from the Broadcasting Board of Governors. Wimbush had been on the board since summer 2010 but has been associated with U.S. international broadcasting much longer; he was director of Radio Liberty in Munich from 1987 to 1993. Wimbush recently became senior director for foreign policy and civil society at the German Marshall Fund of the United States, and he said the job was impacting his ability to devote time to the BBG. The board normally consists of nine members. Walter Isaacson resigned as board chair in January; his position remains vacant.

**Company: MicW**  
**Product: i-Series Professional Microphones**



Here's a product for our times.

The i-Series professional microphones from MicW are designed for iOS devices such as iPad, iPhone and iPod Touch; they can also be used with other mobile devices. All use a 1/8-inch mini connector.

Suitable for mobile journalism, the i-Series allows broadcasters to carry out live broadcasts and other tasks with their smartphones.

The i-Series range includes the i436 professional Class 2 mic for measurement and recording; the i456 cardioid general-purpose mic; the i266 high-sensitivity cardioid mic for high-quality recording (shown); the i825 omni lavalier mic; and the i855 cardioid lavalier mic for the recording of interviews, HD video production and ENG. Retail pricing ranges from \$119 to \$209. Pictured are Dr. Qunli Wu and Vivi Zhu.

Info: [www.mic-w.com](http://www.mic-w.com)

# Why does Axia outsell every other IP console? We've got connections.

Did you know that there are over 2,500 Axia consoles on the air? That's more than all other AoIP consoles — combined. Is it because our ads are so irresistible? Our marketing guys think so... but, no. It's because broadcasters know that a network's value increases with the number of devices that talk to it. And nobody connects to more IP-Audio devices than Axia.

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# Read That Mirrored Scale Correctly

Remember: If the Reflection Is Visible, the Reading Is Wrong

An engineer recently inquired about the mirrored scaling found on some meters — primarily RF power or AM ammeters — and what this scaling

## WORKBENCH

by John Bisset

Read more Workbench articles online at [radioworld.com](http://radioworld.com)

meant. It's curious how many of us seasoned engineers just assume everyone else shares our knowledge.

So, old-timers, indulge me for a moment as I call your attention to Fig. 1. Manufacturers added the mirror strip

to improve reading accuracy. Especially with critical readings, as when measuring a station's power, you want the most accurate reading. (You know: Keep the PD happy by squeezing every last legal watt out of that transmitter.)

If you look at a meter from an angle — not directly in front or perpendicular to the meter face — you will get an erroneous value, either too high or low depending on which side of the pointer you are viewing. When reading a mirrored scale meter, your eye is in the correct position when the pointer itself hides the reflection of the pointer, dis-

played in the mirror.

In Fig. 1, you can see the reflection of the meter pointer, so the camera was not aimed directly at the meter when the photo was taken. The picture shows the reflection off to the left slightly. If you move your head so that the pointer itself hides the pointer reflection, your reading will be accurate.

Fig. 2 is a little better; it's not easy to hold the camera straight and steady without a tripod. But in this photo, you can see that the reflection is nearly covered by the meter's pointer. So the

accuracy is improving.

Even with the linear meter scales of the Delta Electronics TCA Series AM ammeter, having the mirror is a big help in determining direct power measurements accurately. So keep this rule in mind when reading mirrored scale meters: If the reflection is visible, what you're reading is wrong!

If an engineer finds that his or her station budget is a bit short (show me one that isn't) but would still like to implement a Caller-ID system, Wayne Eckert of Channel Images recommends the Motorola Freescale MC154447 IC, a Caller-ID data receiver in a 16-pin DIP package.

Though the product has been out of production for some time now, it is still

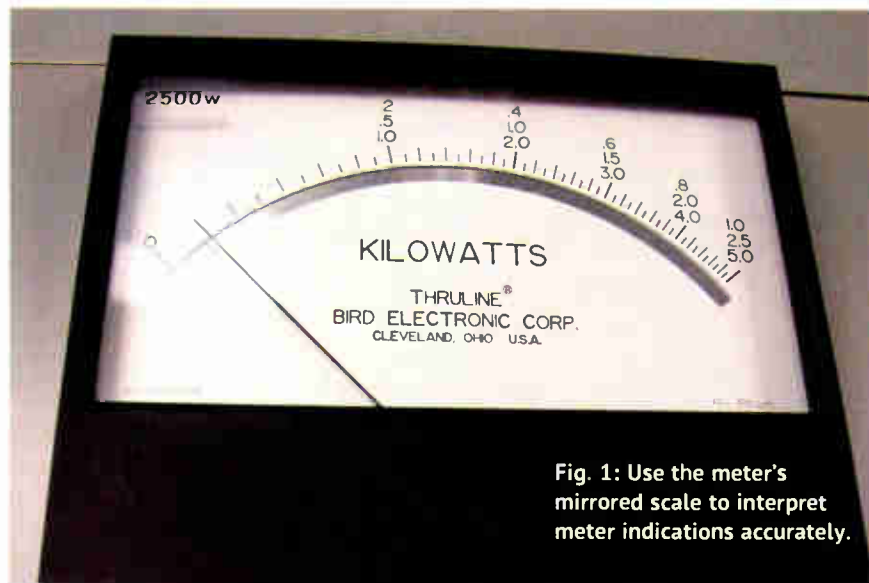


Fig. 1: Use the meter's mirrored scale to interpret meter indications accurately.

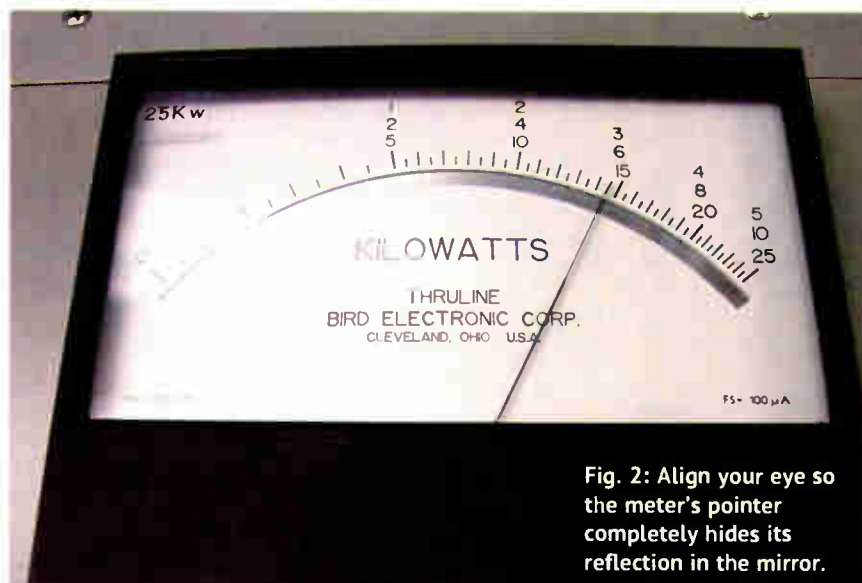


Fig. 2: Align your eye so the meter's pointer completely hides its reflection in the mirror.

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available in single or small quantities for less than \$10 each.

The output of the chip dumps data at 1200 baud; that data can be massaged into an app or simply dumped into a line printer such as an OKI Data DMP. One source is [www.dpcav.com](http://www.dpcav.com), selling them for \$6.95 each at press time.

Our Radio World links page has the URL as well as a link to the data sheet for the chip. Visit <http://radioworld.com/june-06-2012>.

Thanks, Wayne, for a great budget-saving construction project. Wayne Eckert can be reached at [w.eckert@channellimages.com](mailto:w.eckert@channellimages.com).

Contribute to Workbench. You'll help your fellow engineers and qualify for SBE recertification credit. Send Workbench tips to [johnpbisset@gmail.com](mailto:johnpbisset@gmail.com). Fax to (603) 472-4944.

Author John Bisset has spent 43 years in the broadcasting industry, and is still learning. He is SBE Certified, and is a past recipient of the SBE's Educator of the Year Award. John just joined Elenos USA, an FM Transmitter Company based in Miami.





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World Radio History



**Company: Axia Audio**  
**Product: xNodes IP-Audio Interfaces**

These are the third generation of AoIP interfaces, or "nodes," from Axia, audio interfaces that convert analog and digital audio signals into the Livewire IP audio streams used by Axia's AoIP networks.

They're cool in part because they're self-configuring, so setup is so easy; they're also small. Two fit in 1 RU, and they can be mounted on a wall with an optional kit.



Photo by Jim Peck



xNodes work with stereo and mono audio signals, and can be configured to provide 8-in/8-out mono streams or 4-in/4-out stereo streams. They have RJ-45 ports for each audio input and output and present audio signals on locking DB-25 connectors compatible with DB-to-XLR snakes.

Axia xNodes are available in five versions for various configurations. Analog, AES/EBU and Microphone xNodes retail for \$1,495. Mixed-Signal xNodes list at \$1,595, GPIO xNodes are \$1,295.

Shown: Maciej Szapka of Axia.  
 Info: [www.axiaaudio.com](http://www.axiaaudio.com)



**Company: AEQ**  
**Product: Capitol Console**



For engineers seeking a cost-effective digital console with a small footprint, here is the AEQ Capitol, retailing for \$4,995. It is based on the platform used in the company's Arena and Forum mixing systems but in a "fixed," non-modular design for cost savings.

Photo by Jim Peck

Features include four mic/line mono inputs with selectable 48V phantom power for mics; two USB I/O digital stereo inputs; four AES/EBU digital stereo I/Os that can be configured for S/PDIF; and 12 analog inputs and eight analog outputs, which can be configured as mono I/O and additional secondary headphones output.

Analog stereo outputs for control, studio, cue and studio primary headphone monitoring are provided. Available options include dual-line digital phone hybrid; MADI fiber-optic interface capable of handling up to 64 digital inputs and outputs; and a second AC power supply that can be installed in the console's 2RU engine for redundancy.

Shown from left: Rogelio de la Fuente, Gustavo Robles, Ramon Pascual, Eduardo Villanueva, Peter Howarth and Miguel Sancho.  
 Info: [www.aeqbroadcast.com](http://www.aeqbroadcast.com)



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**Company: Nautel Ltd.**  
**Product: NV<sup>LT</sup> Transmitters**



Photo by Jim Peck

Sometimes, "analog-only" is a selling point.

Nautel launched the NV<sup>LT</sup> line of transmitters, describing them as a combination of the architecture of its NV Series with features of the VS Series. Models are available in 3.5, 5, 7.5 and 10 kW configurations. Price: \$30,000 to \$50,000

Capabilities include analog or AES digital input; PushRadio; Livewire IP Audio I/O; Shoutcast or IceCast streaming input; local content storage; USB audio backup; dynamic RDS, dual SCA and stereo coders; scheduler and playlists. An Orban Inside option with Advanced User Interface integration is available.

Control capabilities include local or remote access via Nautel's GUI with onboard audio spectrum analyzer, mod monitor and other instrumentation.

The transmitter has an integrated direct-to-channel digital exciter with modular solid-state, hot-swappable, redundant architecture. A redundancy package is optionally available with dual FM exciters in hot standby configuration and redundant power supplies. The series boasts 72 percent efficiency.

Shown in analog mode are Ellis Terry, Gary Liebisch, Kevin Rodgers, John Whyte, Chuck Kelly, John Abdour, Gary Manteuffel and Jeff Welton.

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





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11025 Hz	YES	YES
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16000 Hz	YES	YES
22050 Hz	YES	YES
24000 Hz	YES	YES
32000 Hz	YES	YES
44100 Hz	YES	YES
48000 Hz	YES	YES
96000 Hz	YES	YES

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Time	Play
05:59:49	Play
07:47:06	Play
14:01:12	Play
14:08:16	Play
14:18:02	Play
14:23:55	Play
14:35:13	Play
14:45:24	Play
14:51:57	Play
14:56:52	Play
15:00:28	Play
15:07:33	Play
15:17:21	Play
15:21:48	Play
15:27:15	Play
15:38:38	Play
15:49:46	Play

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**Company: ENCO Systems Inc.**  
**Product: ENCO1**

"Replace 50 rack units of gear with two servers and a switch."

So says ENCO of its "virtualized" automation system ENCO1, intended as a departure from the traditional model used by radio broadcasting.

It uses two specialized servers designed around a unique specification for the radio



Photo by Jim Peck



IT environment, creating a redundant physical environment. Inside, ENCO has created a series of virtual machines

that represent your station, or several stations. The company promises that this approach increases efficiency and decreases installation time and costs. The package (servers, software licenses, thin clients, network switches) goes for \$7,995 per seat and is currently available in configurations of four to 20 seats. See a video explaining the concept in detail at the ENCO website.

Getting virtual in the booth are Patrick Campion, Ken Frommert and Dave Turner.

Info: [www.encc.com](http://www.encc.com)



**Company: APT WorldCast Systems**  
**Product: Stream-In Silver/Stream-Out Silver**

This affordable IP audio encoder puts DSP technology to work with the Enhanced apt-X algorithm (and others), balanced XLRs and RS-232 port, in a professional package that retails for less than \$2,000 for the pair.

Notably, the company has built in its SureStream technology, on a single port, to provide additional protection against packet loss. Features include half-rack design, VLAN tagging, headphone monitoring and audio backup via USB slot or streaming Shoutcast server.



Photo by Jim Peck

Greeting their award with international elan are, from left: Gregory Mercier, Christophe Poulain, Tony Peterle, Cedric Ferreira, Stephanie Laffiteau and Guillaume Boutin.

Info: [www.apicodecs.com](http://www.apicodecs.com)

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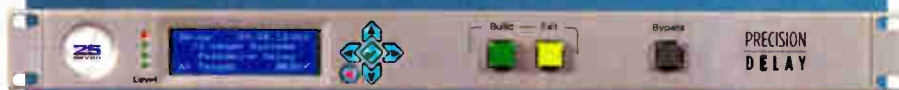


**Company: 25-Seven Systems**  
**Product: Precision Delay**



Photo by Jim Peck

Time management specialist 25-Seven Systems rolled out a Precision Delay that you can use to address drift between analog and HD Radio transmission signals, delay programs across time zones or synchronize broadcast repeaters. For HD use, the box



connects to an Audemat Golden Eagle or Belar FMHD1 mod monitor to fetch offset measurements and adjust your delay automatically. Among its applications: You can put your digital station into "ballgame mode" smoothly so fans at the stadium can listen and watch.

The system's algorithms retain watermarking data such as embedded PPM codes during delay builds and exits.

Features include email alerts; delay data and GPIO; and AES, balanced analog and Livewire IP audio. Its Web server provides control from Internet-accessible locations. Delay times can be adjusted from fractions of a second to five hours. Stereo delays can run up to five hours and mono delays up to 10. Price: \$3,890.

Rick Sawyer, Derek Pilkington and Geoff Steadman celebrate the award. Info: [www.25-seven.com](http://www.25-seven.com).

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# Shortwave Gathering Identifies Broadcast Opportunities

BY ALEXIS HAUKE

A large portion of presentations at the National Association of Shortwave Broadcasters meeting, held in Washington May 10–11, centered on the issue of how shortwave radio — dismissed by some as in its last throes, a relic of the Cold War era disappearing under the shadow of digital — can eke out a place in the 21st century.

As many of the conference's speakers

argued, the solution for now may reside in areas with little electricity, where shortwave is seen as an effective and necessary means of relaying information under the nose of repressive regimes.

Presenting the results of a recent study on shortwave audiences across the globe, Dr. Kim Andrew Elliott, an audience research specialist at International Broadcasting Bureau, pointed out that in countries like Nigeria and Zimbabwe, radio ownership far surpassed television.

In the impoverished landscape of Mugabe's Zimbabwe, 32 percent of those surveyed own shortwave radios, according to Elliott. The surveys were conducted randomly, face-to-face and door-to-door.

Burma, another stronghold for shortwave, with a 60 percent listenership, is ranked by the Reporters without Borders website as 169 out of 179 for freedom of the press, slightly up from its 2010 spot (174).



Photos courtesy of Jeff White

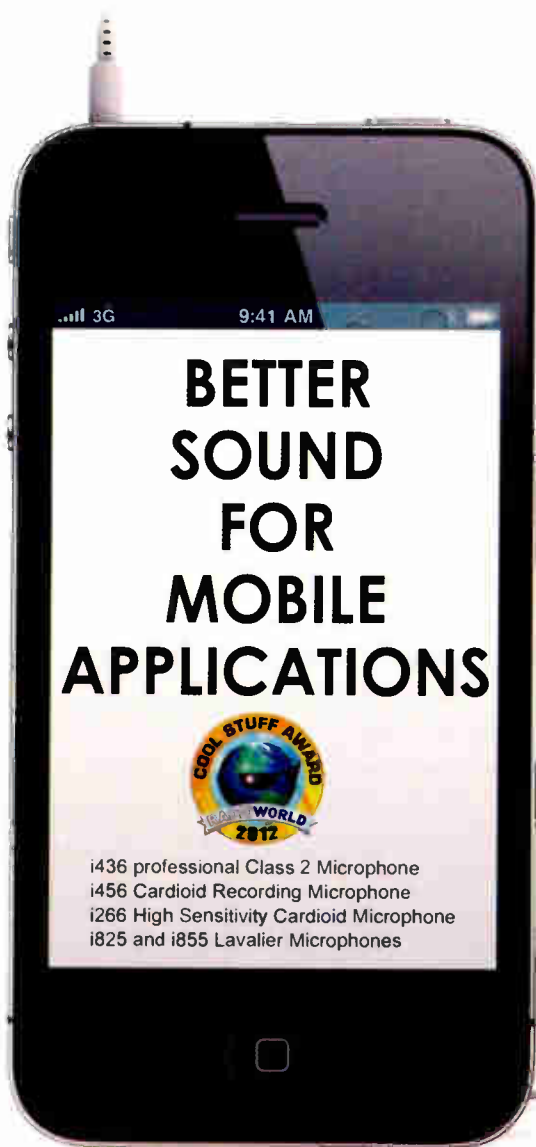
Voice of America's Chief White House Correspondent Dan Robinson shares how his interest in shortwave radio led him to a prestigious career as an international broadcast journalist.



Presenter Kim Andrew Elliott and NASWB Secretary Jeff White take a short break between sessions.

"People are listening to radio at work. They may not have a radio at home but they're listening where they can," said Elliott. People are "very comfortable about owning shortwave radios and tuning them."

The attendees of the conference, representing various interests in the shortwave world, hailing from across the country, got a tour of Radio Free Asia, the conference's host location, which has managed to broadcast even to the highly censored North Korea via shortwave, which is more difficult to interrupt than the Internet and is one of the only means of bringing in news from the international community.



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Presenter Thomas Witherspoon, who founded Ears to Our World, a nonprofit based near Asheville, N.C., which supplies shortwave radios to South Sudan, said, "I get asked all the time, 'Why do you still use shortwave radio? That's like something my grandpa had.' People know by and large that it's on the decline ... We're working in the places where it's not on the decline as much."

He said he was skeptical when people dismiss shortwave radio's future on premises like "the Internet is everywhere."

"I always like to think there's an opportunity in this," Witherspoon said. "We can look at all these reasons why (radio) is on the decline, or instead ways we can invest in shortwave radio and why we should do that. First of all, it's affordable, and you broadcasters are doing it pretty efficiently."

**We can look at all these reasons why (radio) is on the decline, or instead ways we can invest in shortwave radio and why we should do that.**

— Thomas Witherspoon

One of the conference's few women attendees, Shahnaz Ghavami, of the FCC, said, "After sitting here today, it's fascinating. It makes you think about shortwave as something new."

The group also heard presentations by the USA DRM (Digital Radio Mondiale) group and from one of NASB's newest members, Antenna Products of Mineral Wells, Texas.

In the business portion of the meeting, NASB Vice President Brady Murray, President Glen Tapley and Secretary-Treasurer Jeff White were all re-elected.

"Of course those of us who are involved in shortwave radio know that it's very much alive and kicking. It's our job to make sure that the big bosses who fund shortwave stations know this too, so they don't keep eliminating funding for these operations," White wrote in an email after the conference.

"And along with this, we need to find new, innovative ways to make shortwave relevant in today's media-saturated world. So it's important for us to get together — if only once a year — and share ideas with each other."

Next year's NASB annual meeting will be held in Birmingham, Ala., May 16 and 17, 2013.

**PEOPLENEWS**

Broadcast software vendor RCS added industry veteran **Criss Onan** as its northeast sales manager for the United States. Onan most recently was with Broadcast Electronics, which he joined in 1993. He was a senior regional account manager. Before BE, Onan was sales manager for broadcast equipment distributor Northeast Broadcast Lab. He has also been a station engineer and operations and general manager.

The **Broadcasting Board of Governors** said goodbye to **S. Enders Wimbush**, who



**John Macdonald**

stepped down from his post because he recently became senior director for foreign policy and civil society at the German Marshall Fund of the United States, and said the work was taking away from his ability to devote the necessary time and attention to BBG.

**Nautel** hired **John Macdonald** as regional sales manager for the Middle East and Africa, to be based in Quincy, Ill. Macdonald was most recently regional sales manager for Europe, Middle East, Africa and Latin America at Broadcast Electronics.

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three models



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all ARC consoles feature built in PC USB sound cards and come with 'Xtreme Studios' live on air software

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all prices are msrp



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

*Greg Landgraf, Senior Engineering Manager,  
Corus Radio Western Canada*

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

*Benjamin Brintzer, Regional VP Engineering  
Clear Channel Media & Entertainment*

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

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

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

*Phillip Vaughan, Chief Engineer KFROG,  
CBS Radio*

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

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

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

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



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World Radio History



**“gotta have it!”**



**“Wow, Wow!”**

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

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

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

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

*Norman Philips, Vice President of Engineering,  
Townsquare Media*

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

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

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

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

**LX-24**  
ADVANCED MODULAR  
NETWORKABLE CONSOLE

**Wheatstone**

World Radio History



# Tieline Report-IT Comes Through for KSON

The Promo Tent Was Destroyed but the Show Went on, Thanks to a Smartphone Codec

## USERREPORT

BY BILL EISENHAMER  
Chief Engineer  
Lincoln Financial Media Co. of CA  
KSON(FM)/KIFM(FM)/  
KBZT(FM)/KSOQ(FM)

**SAN DIEGO** — It was a dark and stormy night on the night of the concert ... Well, a dark and stormy afternoon. In Southern California normally we do not have many dark and stormy nights, but on occasion we do get a storm or two.

Many of KSON(FM)'s live broadcasts are done under a tent to protect us from the most threatening element, usually the sun. But no matter what we'll promote the concert with the gusto it deserves. Well, this particular Friday afternoon was just not normal.

Our typical setup for a remote broadcast consists of a Tieline i-Mix G3 mixer/codec or a Commander G3 Field mixer/

codec based on need. We can connect back to the studio via many different transport formats, be it POTS, ISDN or IP. We can connect with various IP connections ranging from land line-based broadband or DSL to wireless via 4G LTE and Wi-Fi. We have equipped ourselves for most situations and Tieline Technologies has provided our codecs of choice. On this day our director of IT, JR Rogers, drew the short straw to man our broadcast using the Tieline Commander G3 Field unit and a venue provided the ISDN. Rain was in the forecast, so I was happy to let JR run this one.

### RAINING

JR set up the equipment and KSON was on the air with the Tieline Commander G3 Field codec via ISDN. The rain began to fall, but not too badly at first. As the afternoon progressed, however, the winds began to pick up and the rain fell almost with purpose. The power



KSON afternoon show host Kimo Jensen broadcasts from inside a vehicle, safe and dry, courtesy of the Tieline Report-IT smartphone codec.

strip started to get wet, putting the equipment in jeopardy, so JR decided it was time to pack it up. He got the equipment and air talent, Kimo Jensen, in the car, pulled out his HTC Thunderbolt, opened

the Tieline Report-IT smartphone codec application, made the connection, and told Kimo to get on with the show.

Moments later a gust of wind picked

(continued on page 28)

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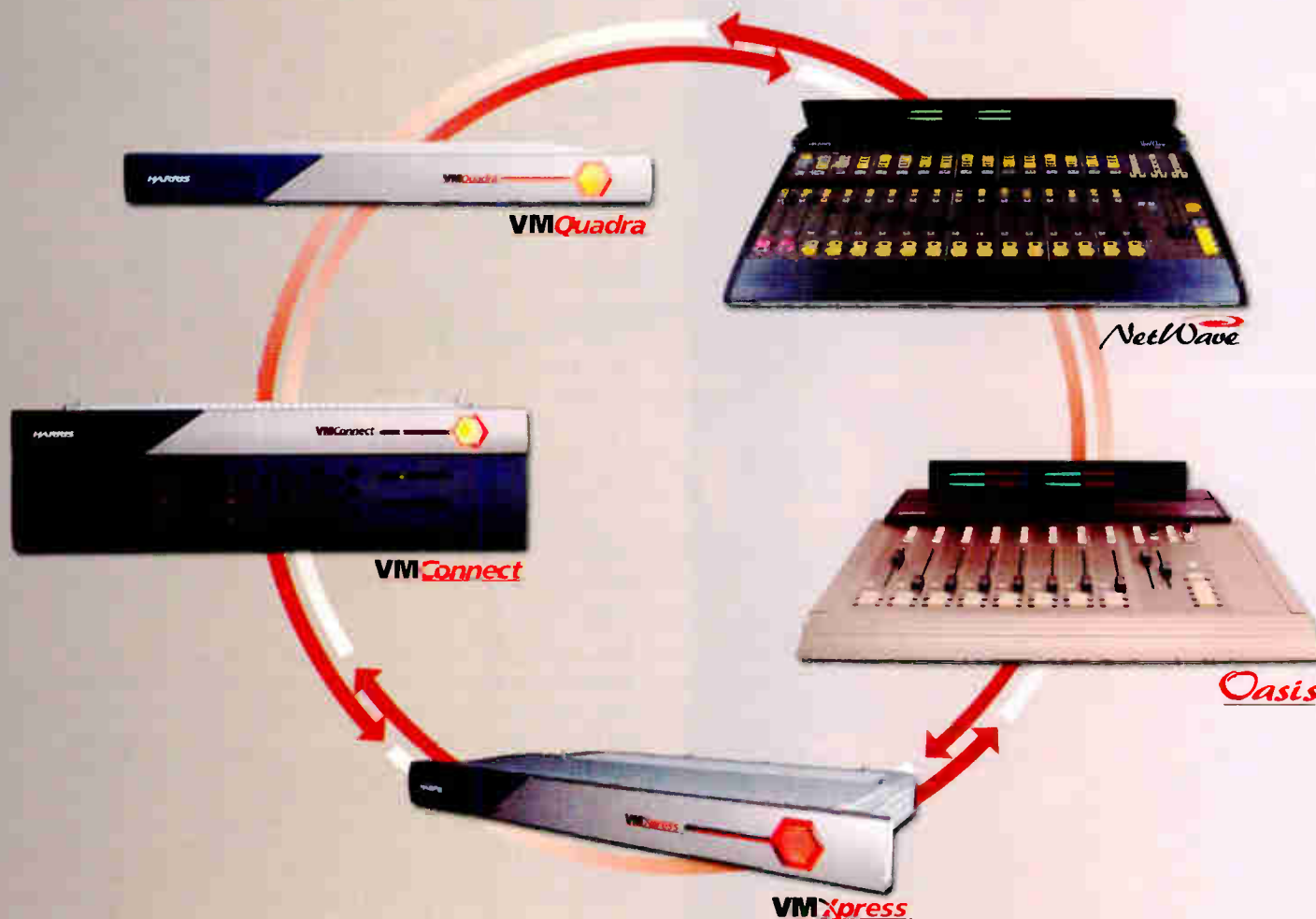
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Jim Thomason **866-573-5935** Southwest

**TECHUPDATES**

**LOGITEK JETSET MOBILIZES JETSTREAM**

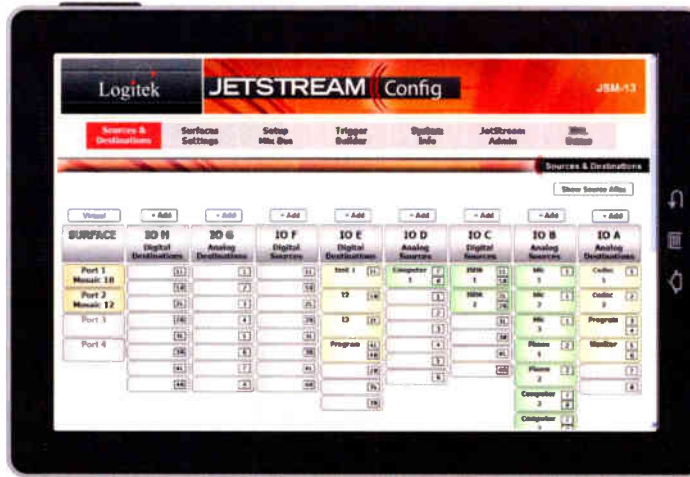
The Logitek JetSet Web interface provides mobile access to Logitek's configuration software for the JetStream networked audio platform.

JetSet operates on all popular browsers for remote access via any device with graphical capability and Internet access. Devices such as tablets, smartphones and computers may be used with JetSet.

Users have full access to configuration files along with simple selection menus. Operation includes assigning sources to faders and network destinations, router changes, building triggers, determining mix buses and more.

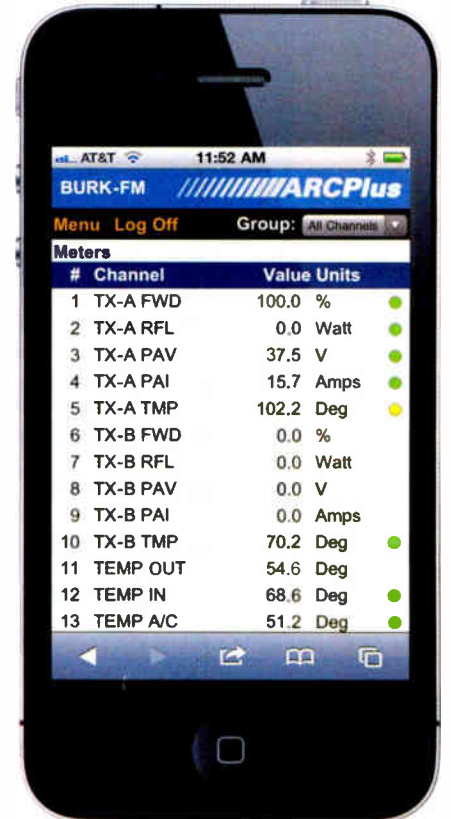
JetSet is now available and is included at no charge with all new systems.

For information, contact Logitek in Texas at (800) 231-5870 or visit [www.logitekaudio.com](http://www.logitekaudio.com).

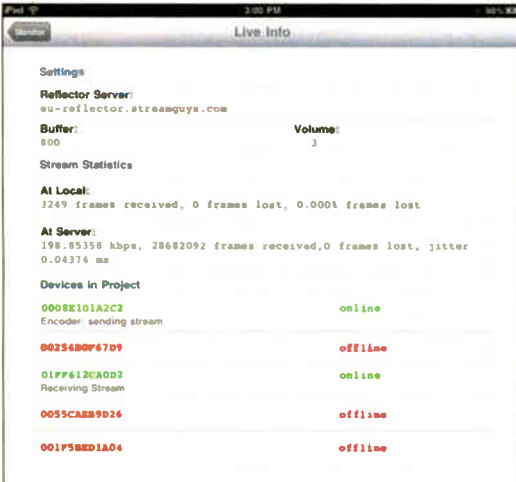


**SMARTPHONE INTERFACE FOR BURK ARC PLUS IS AVAILABLE**

Burk Technology has an all-new smartphone interface in Version 3 of the ARC Plus remote control system firmware. The embedded, Web-based smartphone interface is designed to work on iPhone, Android, BlackBerry and other mobile devices. This provides mobile real-time monitoring and control capabilities for the ARC Plus, as well as alarm reports, event logging and access to macros.



**BARIX HAS IOS APP FOR REFLECTOR SERVICE**



The Barix Reflector App is a mobile interface for the Barix Reflector Service, used by broadcasters and service providers to stream audio between two or more points. The free iOS app was developed for use on the iPhone, iPod Touch and iPad.

The Reflector App taps into the main Reflector Service audio feed to allow real-time listening and monitoring of contact closure status and network statistics. This gives users access to a wealth of information about their streams and channels from any location, allowing engineers to confirm that everything from audio levels to automated program breaks are operating correctly.

The Reflector iOS application is now available through Apple's iTunes store. Users simply download the app and register their mobile devices with the Reflector Service to begin monitoring audio feeds within seconds.

The complete Barix Reflector solution now includes the Reflector App as well as the Reflector Service, which is paired with Barix audio over IP hardware at the send and receive points. This creates a plug-and-play installation that can have broadcasters streaming and monitoring audio over IP links within minutes.

For information contact Barix in Minnesota at (866) 815-0866 or visit [www.barix.com](http://www.barix.com).

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PHONE: 630.736.9822 FAX: 630.736.0353

Smartphone access to a remote control system provides broadcasters with a significant advantage over the legacy DTMF approach. A mobile device provides immediate access to all channels, without having to listen to the system read each value individually.

Paired with email or SMS alarm notifications, broadcasters can respond to an alert and correct a problem rapidly and accurately.

Version 3 of the ARC Plus firmware also includes a new desktop/tablet Web interface. The Web interface operates without Java or other plug-ins, making it fully functional on all platforms and browsers — including tablets and mobile devices.

A live demo of the ARC Plus smartphone interface is available at demo. [burk.com/mobile/](http://burk.com/mobile/).

For information, contact Burk Technology in Massachusetts at (978) 486-0086 or visit [www.burk.com](http://www.burk.com).

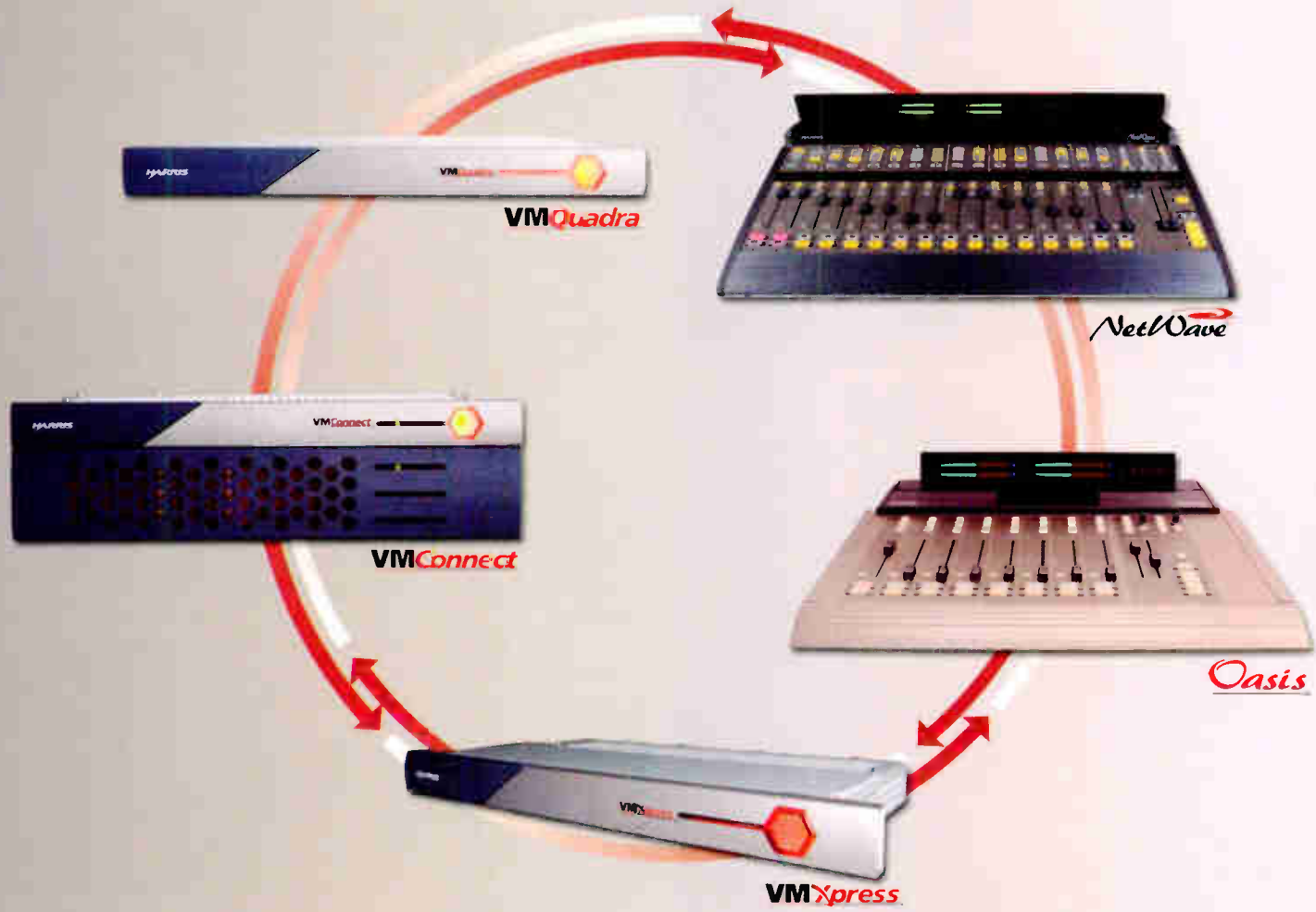
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Lily Massari 760-650-1427 Latin America  
Art Reed / Bob Eburg 800-732-7665 Bradley Div.  
Jim Thomason 866-573-5935 Southwest



Company: **JK Audio**  
Product: **RemoteMix One**

This belt-pack field interview tool, incorporating a professional mic preamp and headphone amp, lets you do professional man-on-the-street interviews through your cell phone. It provides two-way IFB through the phone or notepad for remote monitoring.



Photo by Jim Peck



Connect to your phone or notepad through the wired headset jack. A 3.5 mm stereo line input jack allows recordings to be mixed in. A

3.5 mm stereo line output jack provides

your mic signal on the left channel and return audio on the right. Stereo headphone output gives a mix of the XLR microphone input, 3.5 mm input and return audio. Use it as a headset replacement for normal voice calls, or transmit full-bandwidth audio using popular codec apps. Expect 20+ hours on a 9V cell. Price: \$315.

JK Audio's Alberto Colin, right, accepts the award from Radio World's Paul McLane.

Info: [www.jkaudio.com](http://www.jkaudio.com)

## TIELINE

(continued from page 26)

up the promotion tent, where they had been broadcasting previously, twisted it in the air, and slammed it into the ground. Broadcast 1, Tent 0.

JR and Kimo proceeded with the broadcast from the car, driving around the venue parking lot talking with folks out to brave the weather and the concert.

Early last year we had begun testing the Tieline Report-IT application for iPhone and iPad. We saw promise and attempted to do short call-in type breaks on some shows. On KSON's sister station, KIFM(FM), we even attempted a full four-hour broadcast on an iPad via a 4G LTE hotspot. We decided to purchase the Enterprise Edition 10-seat license and began inquiring about an Android version of the application since we are an Android shop. Two weeks prior to the rain-dampened broadcast we found out the application was available, so each of us downloaded it and began to play with it.

The Report-IT application can be downloaded from the App Store in iTunes for the iPhone and Google Play (formerly known as the Android Market) for Android phones.

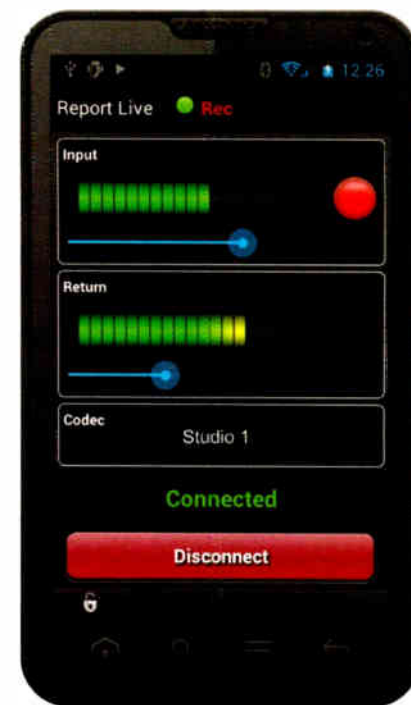
A Tieline codec with IP capability is required at the studio. We have three compatible rack units to cover any overlap depending on our station needs.

Once the administrator has set up configurations and user accounts, the use of the application is a breeze. The simple steps are as follows: Open the application, log in with user name and password, choose "connect" to connect with the default codec or select another codec and start your show. This allows you to go live in minutes.

Simple slider-type controls adjust input levels and return levels. One can record reports prior to connecting with a codec. The Android application does not allow for editing these clips, from what I can see, but since it records in WAV format, it is easy enough to find a third-party WAV editor. Once recorded, a user connects with the studio codec and plays it live. Or if an FTP server is available, the clip can be uploaded for manipulation later.

When we first began testing the Report-IT application, Tieline's iPhone Mic Adapter hardware interface was not yet available. JR and I searched for a convenient and inexpensive solution for interfacing external microphones and headphones. He found the Sescom iPhone-Mic-6, which has worked great.

We have performed many tests with an iPad via a Wi-Fi hotspot. Our initial tests with the Android application were in-house just to see how it works and we quickly compared it to the iPad. We



Screenshot of the Report-IT Smartphone Codec

were eager to try the Android app in the field since we have been using 4G LTE technology for over year and a half, and finally there was a native app. All other use has been through 4G LTE routers and modems. I would say this field test was a success!

At this early stage of use, we have not needed recorded reports. We do see this for the future, though. Our needs are to cover those moments where we do not have the luxury of a site check and face the unknown. For the future the need for a built-in editor for recorded pieces would be a convenience, but if you have time to edit, a third-party editor is just as good. The price for the license depends on the number of seats or users. Our 10-seat license covers the number of users we have right now.

We are Verizon subscribers here and have had no issues finding the application on the Verizon devices. As of this writing some of our people have AT&T phones and for some reason cannot find the app. We find this interesting, but search as we might, it does not show in the Android store. So far we have no experience with Sprint or Cricket Wireless.

The Tieline Report-IT Enterprise Edition for Android turned out to be a live broadcast savior on that stormy afternoon. It served the purpose and justified our choice to purchase the licenses. As we move forward we will be seeing the use grow from simple call-ins from promotional events to full live broadcasts as the need arises. This is the future of news gathering and we will only see it grow.

For information, contact John Lackness at Tieline in Indiana at (317) 845-8000, ext. 118 or visit [www.tieline.com](http://www.tieline.com).

Company: **Elenos**  
Product: **Indium Series FM Transmitters**



The Indium Series was introduced two years ago but grew notably at NAB with the addition of versions in 2 kW and 5 kW power levels.

Elenos calls Indium the first solid-state FM transmitter to break 70 percent operating efficiency, for cooler operation and energy savings. The box uses RF planar technology for a lower parts count and greater reliability; and it employs the readily available ICE-FET component to generate RF power. The 2 kW unit retails for \$11,900, the 5 kW is \$25,550.



Photo by Jim Peck

A useful choice for standby facilities and low-power stations or as a solid-state driver for higher-power tube systems. With the company taking a higher profile in the United States lately, it's a product line worth getting to know.

Shown: Josue Rodríguez, Gianluca Busi, Alfonso Lopez, Edgar Higueros, Maurice Nifruilli, Daniele Prosperini, Mary Ann Seidler and John Bisset.

Info: [www.elenos.com](http://www.elenos.com)

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The best part? The Nx6 package including Assistant Producer call screening software and one Desktop Director is yours for only \$4,295 MSRP.

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### STREAMING AUDIO



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### AUDIO LOGGING



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



**Company: Ross Video Ltd.**  
**Product: Inception Social Media Management**

Tools to manage social media are getting more sophisticated and industry-specific. Here is an example that comes over from the video side of the spring show.

Inception is a system that helps a station manage social connections through controlled delivery of stories, promotions, messages and announcements. Content from the newsroom or promo staff is formatted for the Web and automatically published when you want.

It uses a process of "Create -> Edit -> Submit -> Approve -> Publish" to guide you from story concept to delivery. A plug-in architecture allows you to choose when and where stories come from, how material is published and ways to customize the system. It has plug-ins for social networks like Twitter and Facebook and video hosting sites like YouTube and Brightcove, as well as plug-ins for scheduling and email approval.

Allan Pepper and Shawn Snider get social.

Info: [www.rossvideo.com](http://www.rossvideo.com)



Photo by Jim Peck

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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.



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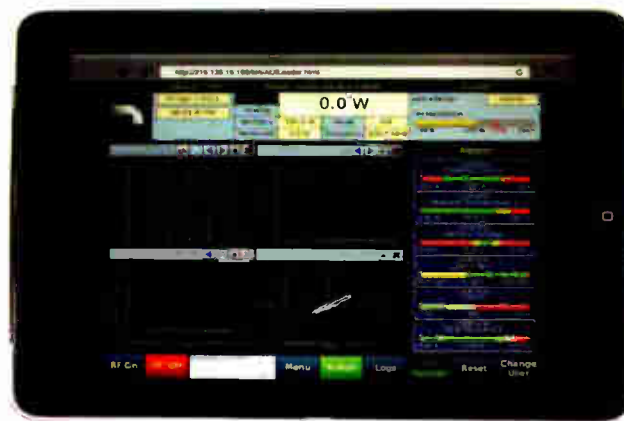
## TECHUPDATE

### NAUTEL HAS AUI AND NXLINK MOBILE APPS

Nautel's Advanced User Interface (AUI) is a web server that can be used from any location with Internet access and may be operated via smartphones, tablets or computers. Because the AUI was written for the PC and uses Flash, users of iPhones and iPads had difficulty accessing it until last year, when a number of browsers with Flash were released for those devices. The AUI may now be accessed from any browser-capable smartphone or tablet.

The Nautel AUI is a portal to the control and instrumentation capabilities that are included in Nautel NX, NV and VS Series transmitters. It provides comprehensive monitoring and control (down to the submodule level), an industry-grade spectrum analyzer, extensive logging of events, tolerance and alarm monitoring, an HD Radio constellation view and more, with local touchscreen and remote access.

According to Nautel, users of older Nautel transmitters aren't left out when it comes to remote access. The optional NxLink adds IP-based access to V Series (FM), XR Series (AM) and J1000 (AM) transmitters for fast and easy remote monitoring and control from virtually anywhere. Users can access status, controls, alarms, logs and reports via smartphones or any Internet-connected browser. NxLink can be configured for use with single or multiple users; up to eight configurable information pages



are available for each device and each information page can display up to 16 channels of equipment data.

For information, contact Nautel in Nova Scotia at (902) 823-2233 or visit [www.nautel.com](http://www.nautel.com)

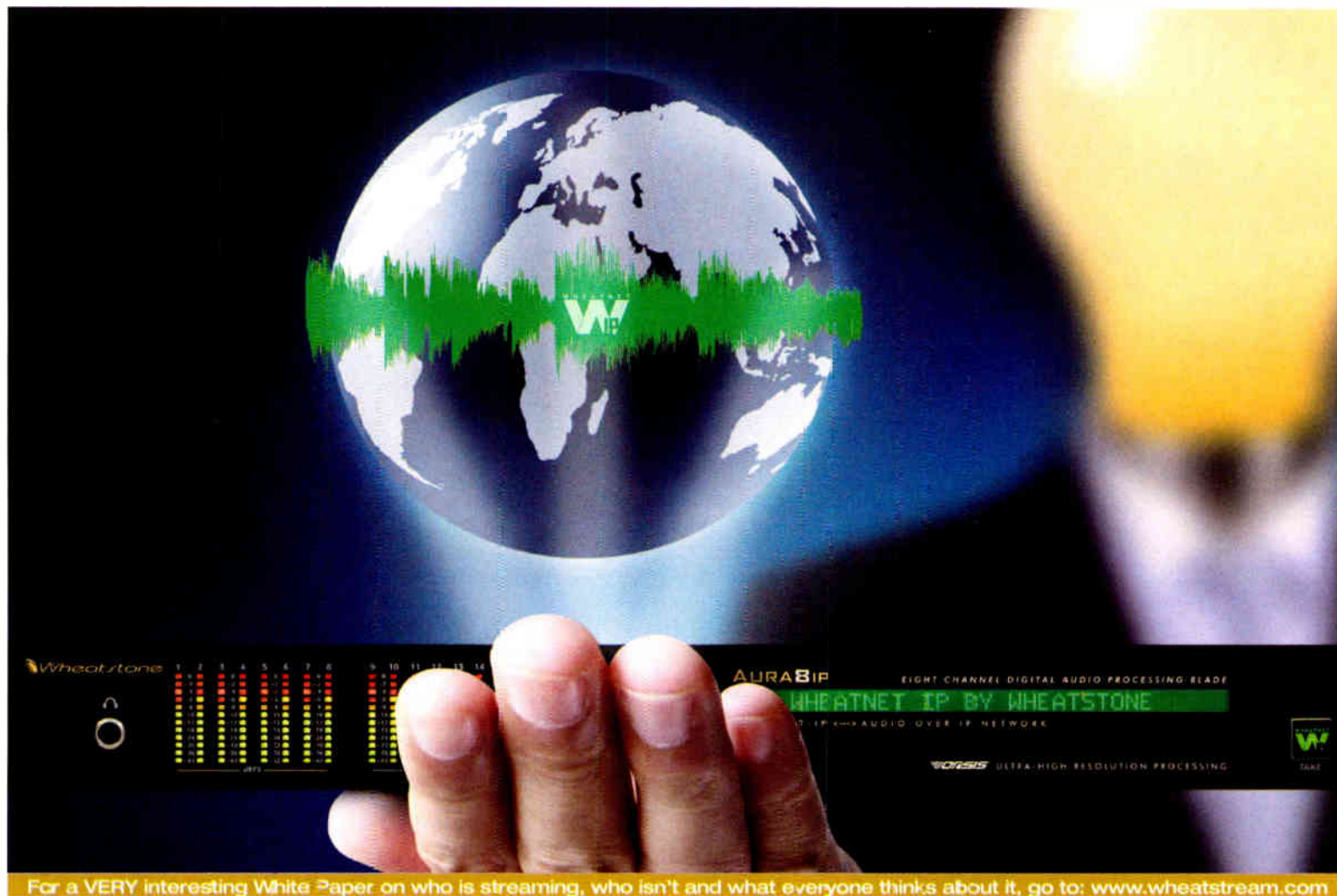
## ABOUT BUYER'S GUIDE

Radio World publishes User Reports on products in various equipment classes throughout the year to help potential buyers understand why colleagues chose the equipment they did. A User Report is an unpaid testimonial by a user who has already purchased the gear. A Radio World Product Evaluation, by contrast, is a freelance article by a paid reviewer who typically receives a demo loaner. Do you have a story to tell? Write to [bmoss@nbmedia.com](mailto:bmoss@nbmedia.com).





THE INTELLIGENT NETWORK



For a VERY interesting White Paper on who is streaming, who isn't and what everyone thinks about it, go to: [www.wheatstream.com](http://www.wheatstream.com)

## That sound streamed 'round the world? It's WheatNet-IP.

Whether you are already streaming your programming content or preparing to make the leap, one thing is certain – things are changing *fast*. Following the lead of the broadcast video industry, in no time, the internet will be as viable a delivery medium as radio is now (40% of cars sold in 2011 offered internet connection options – think about it).

Built from the ground up using modern gigabit ethernet and standards-based protocols across the entire platform, the WheatNet-IP Intelligent Network™ offers unparalleled functionality. From control surfaces for every application to interfaces for every piece of gear to our new multi-channel Aura8-IP that can process eight audio feeds to unify processing across your entire program chain (or give each stream perfect audio), WheatNet-IP is simply unbeatable.

It's so easy to set up and use it literally lets you take your station back into your own hands – no need for 24 hour help lines or on-site IT specialists (although, we are ALWAYS there for you). WheatNet-IP is the perfect, low cost solution for your internal networking needs and is the key to your streaming future (which is coming right up...).



## THE WHEATNET-IP ENVIRONMENT



INTELLIGENT AUDIO CONTROL SURFACE CONSOLES, INTERFACES, ENGINES & PROCESSORS

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

**TECHUPDATES**

**LOGITEK JETSET MOBILIZES JETSTREAM**

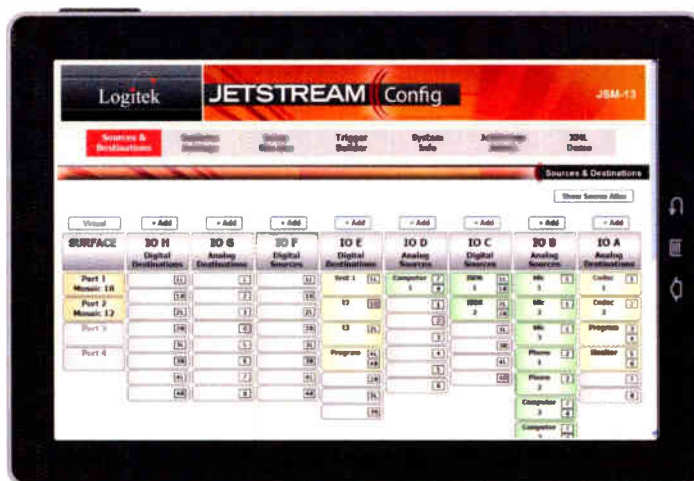
The Logitek JetSet Web interface provides mobile access to Logitek's configuration software for the JetStream networked audio platform.

JetSet operates on all popular browsers for remote access via any device with graphical capability and Internet access. Devices such as tablets, smartphones and computers may be used with JetSet.

Users have full access to configuration files along with simple selection menus. Operation includes assigning sources to faders and network destinations, router changes, building triggers, determining mix buses and more.

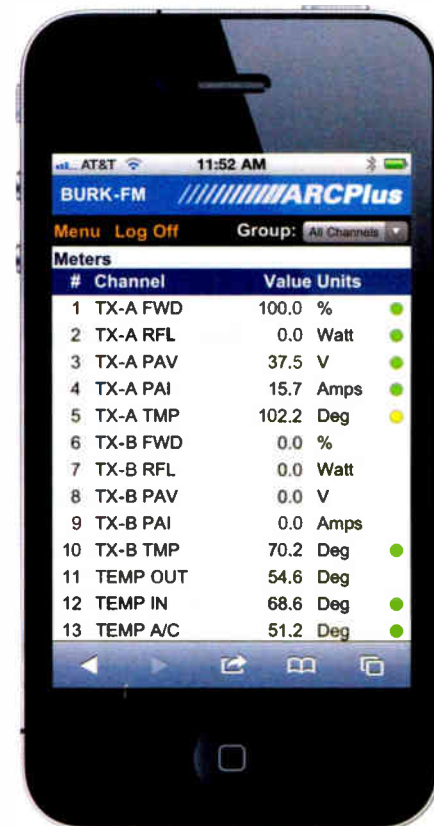
JetSet is now available and is included at no charge with all new systems.

For information, contact Logitek in Texas at (800) 231-5870 or visit [www.logitekaudio.com](http://www.logitekaudio.com).

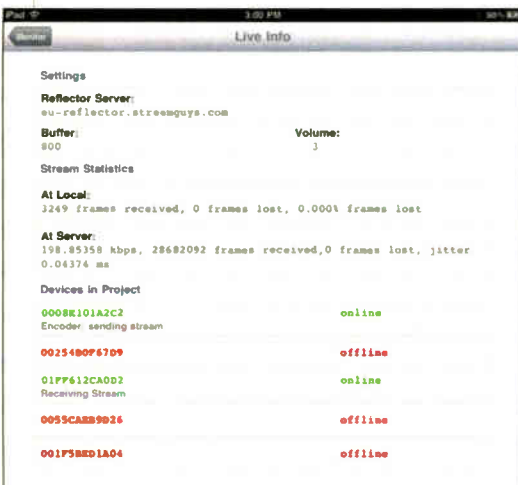


**SMARTPHONE INTERFACE FOR BURK ARC PLUS IS AVAILABLE**

Burk Technology has an all-new smartphone interface in Version 3 of the ARC Plus remote control system firmware. The embedded, Web-based smartphone interface is designed to work on iPhone, Android, BlackBerry and other mobile devices. This provides mobile real-time monitoring and control capabilities for the ARC Plus, as well as alarm reports, event logging and access to macros.



**BARIX HAS IOS APP FOR REFLECTOR SERVICE**



The Barix Reflector App is a mobile interface for the Barix Reflector Service, used by broadcasters and service providers to stream audio between two or more points. The free iOS app was developed for use on the iPhone, iPod Touch and iPad.

The Reflector App taps into the main Reflector Service audio feed to allow real-time listening and monitoring of contact closure status and network statistics. This gives users access to a wealth of information about their streams and channels from any location, allowing engineers to confirm that everything from audio levels to automated program breaks are operating correctly.

The Reflector iOS application is now available through Apple's iTunes store. Users simply download the app and register their mobile devices with the Reflector Service to begin monitoring audio feeds within seconds.

The complete Barix Reflector solution now includes the Reflector App as well as the Reflector Service, which is paired with Barix audio over IP hardware at the send and receive points. This creates a plug-and-play installation that can have broadcasters streaming and monitoring audio over IP links within minutes.

For information contact Barix in Minnesota at (866) 815-0866 or visit [www.barix.com](http://www.barix.com).

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Smartphone access to a remote control system provides broadcasters with a significant advantage over the legacy DTMF approach. A mobile device provides immediate access to all channels, without having to listen to the system read each value individually.

Paired with email or SMS alarm notifications, broadcasters can respond to an alert and correct a problem rapidly and accurately.

Version 3 of the ARC Plus firmware also includes a new desktop/tablet Web interface. The Web interface operates without Java or other plug-ins, making it fully functional on all platforms and browsers — including tablets and mobile devices.

A live demo of the ARC Plus smartphone interface is available at demo. [burk.com/mobile/](http://burk.com/mobile/).

For information, contact Burk Technology in Massachusetts at (978) 486-0086 or visit [www.burk.com](http://www.burk.com).

Omnia



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# MatrixMobile Hits the Road

In Albany the Townsquare Sales Team Takes Their CRM And Sales Management System With Them on the Road

## USERREPORT

BY DAN AUSTIN  
Market Manager  
Townsquare Media

**ALBANY, N.Y.** — Here at Townsquare Media, we started utilizing the Matrix Web-based CRM and sales management software system and its MatrixMobile version (aka the app) earlier this year, to better leverage sales processes and operational opportunities.

Since then, we have been able to capitalize on sales efficiencies across our entire media enterprise.

The mobile functionality has been one of the greatest enhancements. Our sales team consists of four sales managers and 14 account executives, who have all been unthethered from their desks now, newly able to use the Matrix system from their mobile devices anywhere and anytime.

This translates to them being able to access and update account data, including contact records and activities, in real-time.

While we seek out ways to grow multiple revenue streams, Matrix gives us more ways to code and organize our data. This enables us, for instance, to see traditional sales vs. digital sales and further pinpoint where the opportunities lie so we can sell more.

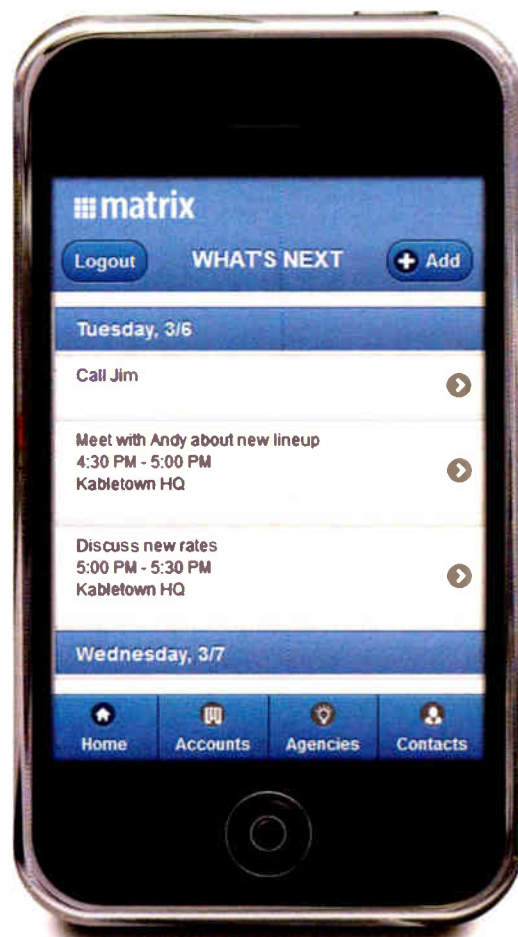
We can also view the overall performance to budget.

Sales managers and account executives can quickly see where they are at with regards to the budget and know where they need to sell more. It's helpful to have that kind of data on the road rather than having to get back to the office to find it.

From an operational standpoint, we recently restructured our sales team, so with Matrix in place across the media enterprise, it enabled them to rely on the system for historical account data; which essentially brought them up to speed quicker and, more importantly, protected customers from falling through the cracks. The fact that our sales team can access comprehensive account data via mobile enables them to now know our business better and capitalize on upsell opportunities faster.

As noted, we now sell, like most broadcasters, across multiple properties and in multiple revenue streams, thus it is critical to have a system that provides the ability to leverage your own proprietary data to your advantage; and having one that you can use via a mobile device is a bonus. The benefits of utilizing MatrixMobile have gone beyond just selling more in our organization. We have acknowledged greater productivity and saved money while also increasing revenue — all things that in the end positively impact the bottom-line ROI.

For information, contact Mike Sutton at Matrix Solutions in Pennsylvania at (412) 697-3030 or visit [www.matrixformedia.com](http://www.matrixformedia.com).



# Control Freaks



**NEW!**

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**WVRC-8**



**AC Power Sentinel® 2**  
**AC Power Sentinel® 2 Plus**



**WVRC-4**



**NEW!**

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**SITE Sentinel® 4**

**AES Switcher Sentinel® 4 »Web**

**Switcher Sentinel® 3 »Web**






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



1664: Just what it looks like. Two tin cups and a string. But it transmitted sound!



1876: Alexander Graham Bell's commercially viable telephone.



1900: Phones become fixtures in more well-to-do and steam-punk homes.



1920: Every home is working toward having a telephone!



1936: The advent of the dial desk phone. No more asking the operator to connect you.



1963: Push buttons usher in the thoroughly modern world. Touch tones enter pop culture.



1983: The mobile phone is a reality. Plots in all TV shows get a boost!



VoIP

2004: IP Telephones begin to become the staple of modern business.



HD VOICE

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**COMREX**

**TECHUPDATES**

**VODDIO RECORDS FOR IOS**

VeriCorder Technology says its Voddio app is the new "Killer App" for radio stations going mobile. According to VeriCorder, it built the first-ever audio editor on the iPhone platform in 2009.

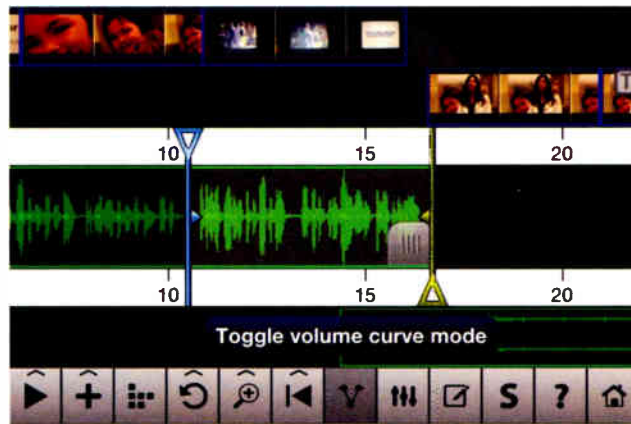
Voddio allows users to edit four tracks of audio on the iPhone version, or six tracks on the iPad version. A touch interface provides volume curves, voice ducking, gain control or cuts and arranges audio clips.

Voddio also allows reporters to produce "audio slide-shows" or full broadcast-quality videos, and then post them automatically to the radio station website. With two tracks of video, and video editing functions, Voddio is the only full-service media editor for "MoJos" or mobile journalists, says VeriCorder.

Aside from being a recorder/editor, Voddio is part of an advanced back-end system that will offer interesting new approaches to the way users run their operations.

Editors can reconfigure and control all of the mobile apps in their network remotely with the new MyReporters console. Users can publish directly to the Web with the VeriLocal content management system. They can push content directly into any newsroom system, using VeriCorder's integration tools.

For information, contact VeriCorder in British Columbia at (250) 448-4954 or visit [www.vericorder.com](http://www.vericorder.com).



**IQOYA \*MOBILE PUTS AUDIO ON THE IPHONE**

The Digigram Iqoya \*Mobile app makes an iPhone into a professional-grade contribution tool for creating a full-duplex connection between a reporter in the field and a newsroom or studio.

Iqoya \*Mobile transforms an iPhone into a high-quality MPEG 2 Layer II and AAC recorder/editor and mobile IP codec. With an iOS device and Iqoya \*Mobile, journalists can record and edit audio and send it to the studio either live over IP or through FTP file transfer. All that is needed is a 3G Internet connection or Wi-Fi access.

Furthermore, when used to connect to a studio equipped with a 100 percent software codec such as Iqoya V\*Call, broadcasters can take advantage of an end-to-end software solution. Iqoya \*Mobile also offers interoperability with Digigram Iqoya \*Call/LE hardware codecs thanks to symmetric RTP connection mode.

Q-Mic, an optional Digigram-engineered mic preamp extension (to be plugged into the iPhone headphone/mic jack), allows journalists to use their preferred microphones during interviews.

Compatible with iPhone 3GS, iPhone 4, iPhone 4S, iPod touch (3rd generation), iPod touch (4th generation) and iPad, the Iqoya \*Mobile app is easy to setup and is targeted at radio or Web journalists operating with an emphasis on mobility. Journalists no longer require bulky, expensive equipment to record and transmit professional quality audio reports on the spot.

For information, contact Digigram/Point Source Audio in California at (415) 226-1122 or visit [www.digigram.com](http://www.digigram.com) or [www.point-sourceaudio.com](http://www.point-sourceaudio.com).



**RADIOTRAFFIC.COM MOBILE APP HELPS OUTSIDE SALES STAFF SAVE TIME**

Ad sales personnel can receive commercial ad availability graphs on their smartphones or other mobile device when their stations use RadioTraffic.com.

Also, radio sales personnel can view and print advertising order confirmations, invoices, statements, affidavits and copy from any mobile device.

In addition, if station policy requires that new orders must be OKed by management before air, RadioTraffic.com can send an email or text message to the cellphone of everyone whose approval is required. Even with text messages to an old flip phone, one gets a series of texts with full details about the order, including start/end dates, number of spots per daypart, rates, total contract value, advertiser name and sales person.

With a smartphone, tablet or laptop, information is more complete (than that on a flip phone) including if weeks are skipped and full advertiser contact info.

For information, contact RadioTraffic.com at (866) 500-0500 or visit [www.RadioTraffic.com](http://www.RadioTraffic.com).

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# MEET THE AXIA FAMILY

**IQ:** The budget friendly expandable console packed with major-market features like automatic mix-minus, 4 stereo mix buses, built in phone integration and avionics grade switches, faders and displays. The IQ is expandable to 24 faders so, as your needs grow IQ can grow with you.



**RADIUS:** With its 4 program buses, automatic mix minus, instant-recall console snapshots, one-touch record mode, convenient talk back and rugged machined aluminum construction. Radius has built in Ethernet ports so you can replace all that expensive cabling with simple network cables. Good things do come in small packages.



**ELEMENT:** Last, but not least! The fully modular, scalable, do anything and everything console. The Element is built to your specifications from 2 to 40 faders in single or split-frame configurations with over a dozen module types you can create a board tailored to your exact needs. With Element you have automatic mix-minus, unlimited show profiles with built-in mic processing and EQ.



**AND THE BEST PART IS- THEY ALL PLAY NICELY TOGETHER!**



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World Radio History



Company: **Sound4**  
Product: **Sound4 x8**



Photo by Jim Peck



The Sound4 x8 is a multi-channel processor for Web radio operations that can process eight radio streams on one PCI express card; it includes metadata management and is compatible with radio automation servers.

It provides eight I/O through an Audio Driver (WDM/Direct Sound), Livewire and/or Ravenna. The engine can

provide five streams per channel (for 40 streams total). Each processed output may be encoded into five streams; each stream can deliver MP3, AAC and HE-AAC v1 and v2 formats. A Predictive HQSound algorithm optimizes codec performance and reduces compression-induced sound artifacts.

Adaptive processing can correct each stream independently in order to compensate for differences due to encoding. "Thus a radio station can easily generate different streams that suit the targeted audience: low rate for mobile phone, high rate for home device, with homogeneous sound whatever the encoder used," the company states. The processor adapts to streaming delivery standards like Flash, Darwin, Helix, Icecast, Shoutcast and Wowza; and it can interface to various automations systems via its XML-based gateway.

Retail price \$490 per channel, sold by four or eight channels. Shown are Vincent Defretin and Camille Gonnet.

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

COMING UP IN BUYER'S GUIDE

**Consoles, Mixers & Routers**  
July 4, 2012

**Audio Transport/STL: Codecs, Telco, Internet & Satellite**  
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# HEAR WHAT'S NEXT

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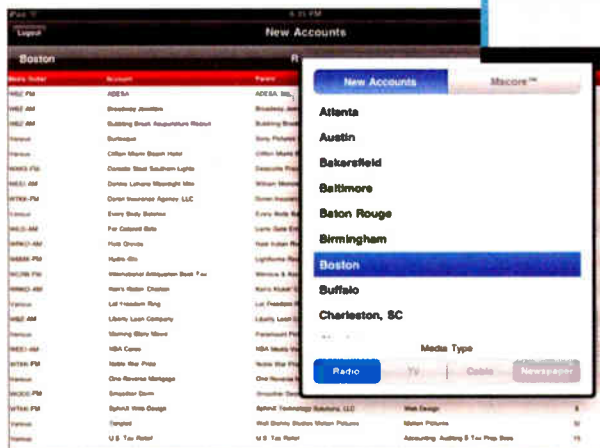


**TECHUPDATES****RCS OFFERS TWO APPS**

From RCS come two apps with different missions.

Media Monitors' MM Reports, an app for your Apple iDevice, allows access to the MM New Accounts report and Mscores. With MM New Accounts, users can instantly see which new advertisers went on the air from anywhere.

Media Monitors says that with the MM Reports app, you have a competitive advantage and fast up-to-the-minute information



that you can turn into a sale. MM Reports works with iPad, iPhone or second-generation or newer iPod Touch.

For RCS's Selector scheduling platform comes Selector2Go. RCS says that Selector2Go allows for perfect rotations anywhere.

Tailored for use on the Web, Selector2Go works on all contemporary browsers and across platforms and mobile devices. The system was designed to keep the interface simple and straightforward. The data flow is kept small to enable fast performance, even on mobile networks like 3G. Selector2Go gives users core scheduling and schedule editing functionality and essential analysis details of cut rotations in the palm of your hand.

For information, contact RCS in New York at (914) 428-4600 or visit [www.rcsworks.com](http://www.rcsworks.com).

**TRANSRADIO ADDS IPAD CONTROL**

Transradio's TRAM AM transmitters now have an iPad 2 control interface.

Transmitter functions can be supervised and monitored by the iPad-based control interface; safety functions of the transmitter are still implemented at the transmitter itself. Analog parameters are monitored and converted by A/D converters for remote monitoring and integration into the GUI, compatible with iPad 2 technology.

In the event of a computer failure, basic functions of the transmitter are still controllable via the control panel on the transmitter.

The TRAM premium LCD offers a choice among TCP/IP, BIT bus, RS-232 or dry contacts for remote control.

The focus of the Transradio TRAM premium LCD line is to offer more comfort for local and remote control while maintaining the reliability of TRAM line transmitters.

The line ranges in power from 5 kW to 600 kW as standalone transmitters or up to 2 MW in a combined version. All are available with the TRAM premium LCD option.

For information, contact Transradio SenderSysteme in Germany at 011-49-30-339-78-0 or visit [www.transradio.eu](http://www.transradio.eu).

**DAYSEQUERRA'S REMOTE DASHBOARD HAS ARTIST EXPERIENCE**

DaySequerra's Remote Dashboard software supports several of its monitoring products such as the M2.2R and M4FM-HD HD Radio receiver and monitor.

Working with the M4FM-HD, the Remote Dashboard gives users the complete HD Radio Artist Experience, a meters tab, audio offset and a settings tab which is accessible on any mobile device. Remote Dashboard also allows for the downloading of backup audio from a remote server.

According to DaySequerra, the Remote Dashboard application will allow a remote user simultaneously to monitor HD Radio program availability and digital audio presence for MPS (HD-1) and all multicast HD-2 through HD-8 broadcasts, along with analog audio presence, analog delay bit and RF carrier signal strength.

The complete HD Radio PAD and SIS data package including station descriptions and program song title, artist, album, genre and comments can be simultaneously displayed, each in its own window. Alarm capability is provided for all Remote Dashboard functions including analog and digital audio silence sensing; active alarm notification is via email. Built-in logging capabilities are provided for PAD and SIS data as well as alarm conditions.

For information, contact DaySequerra in New Jersey at (856) 719-9900 or visit [www.daysequerra.com](http://www.daysequerra.com).



Company: **Broadcast Tools**

Product: **Audio Sentinel + Streaming >> Web**



The "Audio Sentinel + Streaming >> Web" is a Web-enabled, two-channel stereo silence monitor combined with an integrated audio switcher, combined further with the ability to stream MP3 audio of your selected source to a

browser for remote monitoring.

This little box is designed to monitor two balanced or unbalanced stereo analog audio sources and switch to a backup analog audio source if silence is detected on either channel. It can also be used for independent dual-stereo non-switching applications.

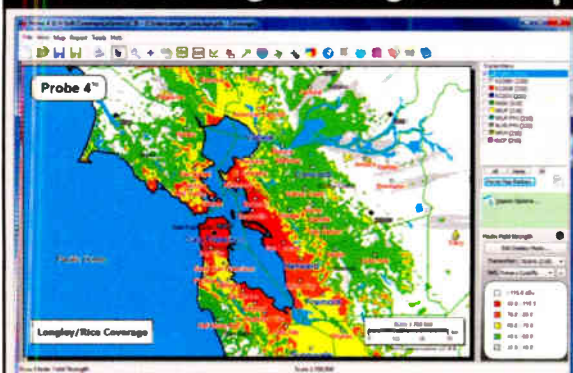
It may be configured to play a backup MP3 audio file when silence is detected. It can be controlled and monitored locally or remotely over an IP network, including private networks, industrial control networks or the Internet. Users can operate it using a browser or Web-enabled mobile device. You can set up email notification to alert up to eight recipients of alarms. You can also enable a sound effect to play on your PC speaker when an alarm is generated. Retail: \$399.

Connie Miller and Don Winget stand sentinel.

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



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Teletronix LA-2A's, UREI LA-3A's & LA-4's, Fairchild 660's & 670's, any Pultec EQ's & any other old tube compressor/limiters, call after 3PM CST - 214 738-7873 or sixtiesradio@yahoo.com.

### AUTOMATION EQUIPMENT

#### WANT TO SELL

It's free and it has been expanded. The only cost is to keep us informed as to how the system is performing and let us know how you are using it. DIY-DJ, is a Linux based radio automation system and now sports a record scheduler (DIY-DJ-RECORDER) which allows you to schedule the recording of a network or any other program for replay later as well as a basic logging system. Beside these additions the system schedules music, does voice tracking (ALWAYS hit the vocal), create a shell, live assist, exact time events, join satellite feeds, automated temperature announce, do unattended remote events and more. Call

(406) 679-0527 or email knws@digitaldevelopment.net for a copy today.

#### WANT TO BUY

Wanted: old analog automation equip, filters and EQ, tube amps, reel to reel, cart machines and parts. Pacific NW area. 503-493-2983.

### MICROPHONES/ HEADPHONES/ SPEAKERS/AMPS

#### WANT TO BUY

RCA 77-DX's & 44-BX's, any other RCA ribbon mics, on-air lights, call after 3PM CST, 214 738-7873 or sixtiesradio@yahoo.com.

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from the 1950's - 1970's, BO. Must purchase entire collection. Contact Ron, 925-284-5428 or ronwtamm@yahoo.com

For Sale from WYSO Radio, all in xlnl cond, Harris PR&E Netwave 24 trade for Netwave 16; Moseley Starlink 9003Q-2SLAN STL system; Moseley PCL-6010 composite STL system; DBI CDS-302 composite audio switcher and DA; Omnia SG stereo generator. Jim Stitt, 513-289-6277 or towerjimsk@gmail.com.

Kintronic FMC-0.2P iso coupler, \$500; Delta TCA-19EX & TC-4 RF amp meter, 0-10 amps, \$600. Art@951.fm or 706-379-9770.

#### WANT TO BUY

Collector wants to buy: old vintage pro gears, compressor/limiter, microphone, mixing consoles, amplifiers, mic preamps, speakers, turntables, EQ working or not, working transformers (UTC Western Electric), Fairchild, Western Electric, Langevin, RCA, Gates, Urei, Altec, Pultec, Collins. Cash - pick up 773-339-9035.

2" plastic "spot" reels 6.5 or 8" diameter, as used for quad video. Wayne, Audio Village, 760-320-0728 or audiovlg@gte.net.

Equipment Wanted: obsolete, or out of service broadcast and recording gear, amplifiers, processing, radio or mixing consoles, microphones, etc. Large lots preferred. Pickup or shipping can be discussed. 443-854-0725 or ajkivi@gmail.com.

I'm looking for San Francisco radio recordings from the 1920's through the 1980's. For example newscast, talk shows, music shows, live band remotes, etc. Stations like KGO, KFRC, KSFO, KTAB, KDIA, KWBR, KSF, KOB, KCBS, KQW, KRE, KTIM, KYA, etc, I will pay for copies... Feel free to call me at 925-284-5428 or you can email me at ronwtamm@yahoo.com.

Looking for a broadcast excerpt of a San Francisco

Giant's taped off of KSFO radio from 1959, interviews with Willie Mays, Dusty Rhodes & some play by play excerpts, also features a homerun by Willie Mays and Felipe Alou stealing second base, running time is 18:02, also looking for SF Giants games and/or highlights from 1958-1978 also taped off KSFO Radio. Ron, 925-284-5428 or ronwtamm@yahoo.com.

Looking for KFRC signoff radio broadcast from 1930 Andy Potter, running time is 0:22 & also the KLX kitchen the program guest is Susanne Caygill, a discussion of women's affairs with a long promotion for Caygill's appearance at a local store. Anne Truax, Susanne Caygill, running time is 13:44. Ron, 925-284-5428 or email ronwtamm@yahoo.com.

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## READER'S FORUM

### HARRIS EXIT NO LAUGHING MATTER

I don't normally get wrapped up in business and politics, but when the news hit that Harris was disposing of their broadcast division, it lit a fire deep inside.

When the Harris Corp. acquired Gates (in 1957), a number of years went by before the dust actually settled and a new line of products made their way into stations everywhere. Prior to the acquisition of the Gates company, Harris was the supplier of Linotype machines for newspapers.

Of course, gone was the warm homey feeling of Gates, but Harris did manage to step up to the plate.

Now we see that Harris wishes to depart and leave broadcasting for greener fields. It's too bad, but it is their choice. I still hold hope for the industry that I truly love. I would hope that those who invest in radio really want the same thing.

*Michael Payne  
Twin Falls, Idaho*

### RADIO HISTORIAN SEEKS HELP WITH MYSTERY MACHINE

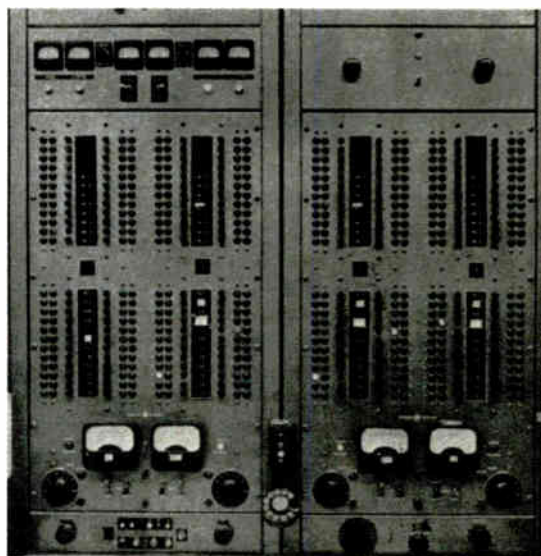
Does anyone know how this device works? It is two of four identical radio master control racks installed in the late '40s/early '50s at 39 West 66th Street (Building G), in Manhattan, for the ABC Radio Network. Rack #1 has two line outputs, L1 and L2; rack #2 has two line outputs, L3 and L4 (each indicated by the large VU meter).

The four small meters on top may represent DC voltages of the battery back-up system. Each switcher independently controls studios 1A, 2A, 3B, 4A, 4B, 4C, 5B, 5C, 6A, 6B, 6C and the Flash Mic/Alert Tones in the newsroom (MC1), four Ampex 300 reel/recorders in master control (MC2-MC5), and patchable inputs like calibration tones (MC6-MC9).

This was the original studio configuration in the early '50s. Supposedly, each row of two vertical bulbs represent REHEARSAL and AIR and associated switch for studio selection. Somewhere a vertical key-switch triggers a rotary/solenoid relay to finalize the selection to line out. The large rotary switch nearest each large VU meter selects the appropriate studio to be monitored or previewed. But the remaining keys, switches, bulbs, and rotary faders are a mystery.

Please contact me by email if you are familiar with this particular device: [mohairmediaCEO@aol.com](mailto:mohairmediaCEO@aol.com).

*Don Browne  
Unofficial ABC Radio Network Historian  
Arlington, Va.*



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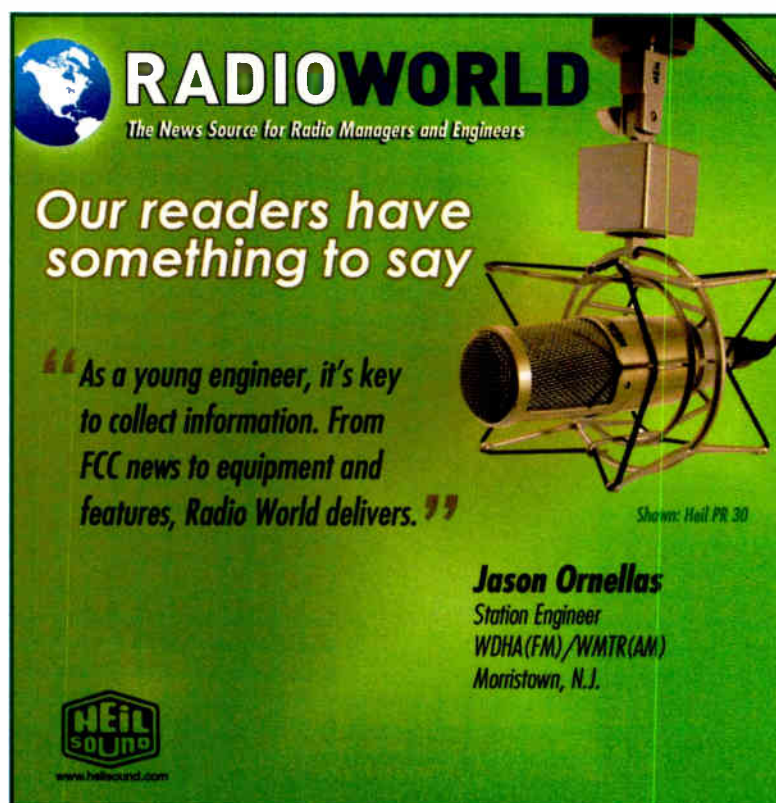
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*Shown: Hail PR 30*

**Jason Ornellas**  
Station Engineer  
WDHA(FM)/WMTR(AM)  
Morristown, N.J.

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All rights reserved.  
Printed in the USA**READER'S FORUM****PANDORA AND ALL THAT JAZZ**

That was an interesting interview with Tim Westergren of Pandora "Westergren Goes Where the Money Is," (Feb. 15).

I listened to (Pandora) a couple of times and found that they did not have much of the kind of jazz that I air on the radio, and they didn't distinguish which performances were the best renditions. I think it's important to air only the best performances of those best performers. (Many of the best players and singers are not well known.)

Some people I know have great jazz collections — the best — and they love to have others listen to their CDs and LPs and musician-approved recordings made at concerts. They talk about it, and they lend copies out to other people.

To me, it is strange what (Mr. Westergren) says about his reluctance to show (his) collection of music. Is that because younger people with the iPods, etc., have been conned into getting a lot of music that's pretty terrible? Is it possible that they realize later on how boring it is, and they've lost interest in it?

Roger De Vore  
Cazenovia, N.Y.

**CAN I GET AN APP FOR THAT?**

Wish list: A PPM app that will tell you what station you're listening to in a public place (restaurant, store, etc.).

Phil Tuck  
Chief Engineer  
WSOL(AM), WJBT(FM)  
Jacksonville, Fla.

**JACK OF ALL TRADES**

In reference to my Radio World article "Make Cheap Talk Even Cheaper" (Mar. 1): Most computer sound cards follow a convention for wiring, but there really is no standard per se that I've been able to identify.

The top end units in their mono wiring have the DC source separated on the ring and the audio input on the tip. This allows all the options of either using a pure audio input or an electric mic.

My observation is that the typical cheaper sound cards and cards with stereo mic inputs have the mic input on the tip with the DC voltage needed for the mic already available through a load resistor.

Thus far, all the inexpensive mic/headsets that I've tried have worked well in this wiring configuration. So the initial connection should be that the tip is what is wired as audio in to the interface, and ground is connected to the sleeve. (Consider jacks from Radio Shack to be a possibility.)

Once complete, if your adapter doesn't work properly, let me know the details of the problem and I'll see if I can help.

Charles S. Fitch  
Hartford, Conn.

**BYTE-ING OFF MORE THAN WE CAN CHEW**

Responding to the article in the April 25 issue of Radio World on low-power WRPO: Mind your bits and bytes. The program director of low-power WRPO is quoted saying they play MP3s but "we only play 320 kilobyte files."

That number of kilobytes per second is more data than a 24 bit stereo WAV file would need.

Presumably the station plays 320 kiloBIT-per-second files. Compressors like MP3 are rated according to their target data rate in kilobits per second.

Now that we have our feet squarely planted in the digital world, it helps to report digital information accurately. Come on, Radio World, do your BIT for digital literacy!

Flawn Williams  
Hyattsville, Md.

**THOSE WERE THE DAYS...**

Thanks for the article about Arcadia ("Arcadia Plugs Into Radio History," Mar. 16).

In 1946 or 1947, the year I earned my first phone, I began working the control room and transmitter site at Syracuse, N.Y. station WOLF (1490 AM). I was a senior in high school, about 17 years old. At that time, WOLF studio was on the 10th floor of the Onondaga Hotel, in the former WFBL location that went back so far I don't remember ...

I remember a Collins board, RCA turntable and seven-foot racks of audio with mostly WE tube amplifiers. I was told that some of the WE tubes were originals.

The elevator operator would hold the elevator for me on Sundays when I played religious transcriptions, so I could ride down the 10 floors and walk a block to get a bag of White Tower burgers for the announcer and me to share (13 for a buck then, plus one for the elevator man). I'd get back on the elevator and then into the control room just in time to lift the needle on a 15-inch transcription and cue the announcer to do a station break.

One time, the red phone — a direct line to the station owner's home — rang because the transcription was skipping and the owner wanted to know who was working, and I'd better never do that again. The owner was T.S. Marshall, a very nice person who would frequently come into the control room to chat.

And so it goes. I'll be 83 years old soon, and still remember anecdotes like this. Then, when I was a freshman at Syracuse University, I started working at WAER (88.3 FM). But that's a whole different story. It was a wonderful way to grow up!

Best 73s.

Herbert M. Rosenthal  
Albuquerque, N.M.



**CHENNAI, INDIA**



right:  
In India presenters are known as RJs which stands for Radio Jockeys.

below:  
Malar Publications, in their daily newspaper, proudly announce their new station.

below left:  
Many Indian radio studios are made as colorfully as the local saris.



# RADIO SYSTEMS CONSOLES IN USE WORLD WIDE



*Radio Systems' studio equipment is very user-friendly. This is the response we get from our RJ's. They find the console easy to handle and make full use of for their programs. When it comes to operating the console—it creates an error free operation. Vijayan M., Controller-Administration and HR, Hello FM, Chennai India*

Since their 1999 "Privatization of FM" policy was adopted, the government of India has embarked on an ambitious program to license new broadcasters throughout all 28 States of India. Now in "Phase-III" of implementation, over 700 new FM stations will be authorized and built in cities and towns across India.

Team Radio Systems is proud to be playing a part supplying and building these stations with our New Delhi-based partner, Techno-media Solutions.

"Radio Jockeys" at these new stations appreciate the great looks and ease of operation of their new consoles. And easy and fast installation, expansion and repair is afforded by the plug-and-play StudioHub+ wiring solution that's part of every studio system.

Experience counts, recalls company President Dan Braverman; "I remember that our first GPS clocks would not work because of the ten and a half hour time offset from GMT! But overnight we emailed new code from State-side and had our clocks accurate to Indian Standard Time."

With over 100 Radio Systems Millenium consoles already on-the-air in India, we are set to be team members wherever radio plays.

- below, from left to right:
- Gerrett Conover**  
Vice President
  - Daniel Braverman**  
President
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## TEAM RADIO SYSTEMS

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FLEXIBLE. AFFORDABLE. BUILT TO LAST.



## modular design + ease of use + value = enlightenment

The IP-12's modern, modular design moves all audio, logic and control outside the control surface and into a single rackspace audio interface/mix engine (called a BLADE). This gives you much greater mixing/processing capabilities as well as the ability to cost-effectively add on incredible functionality (more audio sources, automation feeds, STL capabilities, multi-channel processing, more consoles, etc). And, if you've already got the WheatNet-IP Intelligent Network, it fits right in.

Speaking of modular design, the IP-12's construction is exactly that. Need to replace a channel? Two screws and a connector is all it takes. Got automation? IP-12 is hardware-ready. We offer a software driver that works seamlessly with the most popular automation platforms to give you control right from the console!

And here's how easy it is to set up the new IP-12 console: Unbox it. Plug it in. You're ready to go.

But don't let its simple setup fool you. It's one very powerful little console...

Ready for enlightenment? Contact your Audioarts dealer, give us a call or visit us on the web today to learn more about the power, flexibility and affordability of the IP-12.



**IP-12**  
PLUG & PLAY  
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