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FIRST PERSON

BGAN Opens Up Remotes

Author Explores Applications Made Possible by Inmarsat Technology

by Paul Shulins

Broadcasting radio remotes is a challenge. Over the past few years that task has become a bit more difficult with the advent of HD Radio and the resultant delays to be worked around.

Now, a new satellite service and an existing one with more options open new opportunities for broadcast remotes.

Recently EVDO Cards offered by various cellular companies have provided a way to connect wirelessly to the Internet, using data rates approaching a few hundred kilobits per second. The problems are that you have to be in an area where the cellular service is available; and the data rates vary widely depending on the provider, time of day and location, often leading to dropouts and long delay times

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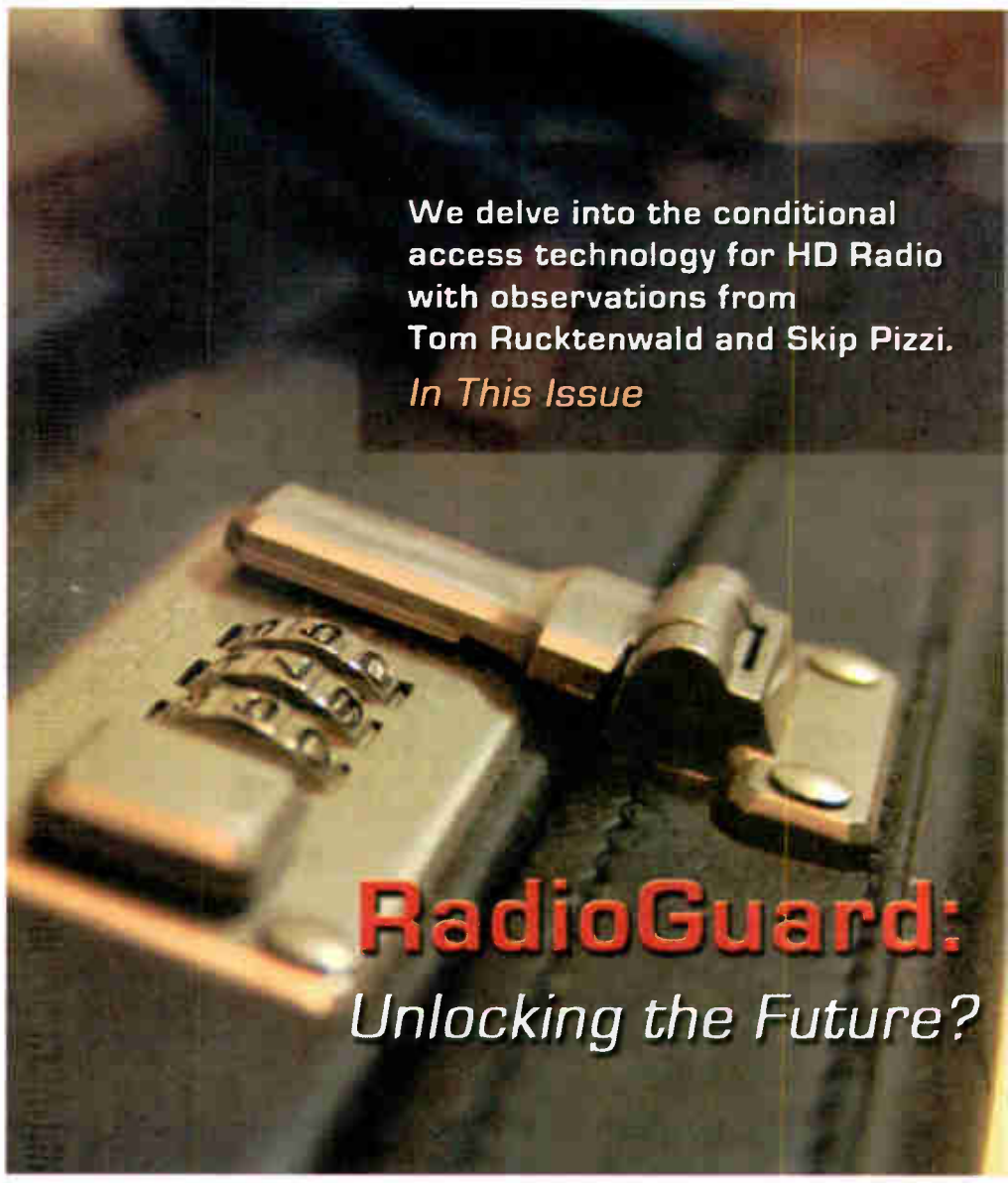

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World Radio History

NEWSWATCH

Since '96, Fewer Listeners; Higher Rates

WASHINGTON There are fewer radio owners than at the time of the 1996 Telecom Act; and radio listening continues to trend down; meanwhile ad rates have nearly doubled. Those are among findings in the FCC's media ownership studies.

The number of radio owners declined by 39 percent during the 11-year period, with most of the decline during the first few years after the act, according to the FCC's "Review of the Radio Industry, 2007."

Over the same period, there has also been an increase in the size of the largest group owners. In 1996, the two largest radio owners had 62 and 53 stations. By March 2007, Clear Channel Communications, owned more than 1,100 radio stations. The second largest, Cumulus Broadcasting, had approximately 300.

Ad rates increased in that time. "Overall, it appears that the cost of radio advertising has nearly doubled since the 1996 Act was passed. By contrast, the CPI increased 29 percent during the same time period," wrote Williams.

Radio listening continues to decline. From the fall of 1998 to the fall of 2006, Arbitron found that the average number of listeners per quarter hour fell 6.6 percent, from about 19.7 million to about 18.4 million, according to the study.

FCC Issues Ownership Studies

WASHINGTON Comments are due by Oct. 1 on 10 media ownership studies released by the FCC to help commissioners as they try to re-craft broadcast ownership rules.

The studies, posted on the FCC's Web site, deal with topics including how consumers use media; ownership structure of all media including satellite radio and the Internet; minority ownership; and trends in radio ownership, format and finance.

Democratic Commissioners Copps and Adelstein said 60 days is not long enough to review the voluminous ownership studies and characterized the deadline as "this bucket of ice water."

"While some are complaining about inaction on this item, it is worth noting that it has been before the commissioners and awaiting their vote since October of last year," stated a commission spokeswoman in response. The item is MB Docket 06-121.

Delano IBB Site to Close

WASHINGTON The International Broadcasting Bureau will stop broadcasting from Delano, Calif., at the end of October.

According to an internal IBB memo, the move will result in an unstated number of job losses at Delano.

In the memo, IBB stated the move is being made to meet current government broadcast requirements, reduced budgets and changes in technology. "As operating budgets decrease, we have had little choice but to downsize and realign the IBB transmission network."

In its memo, the IBB noted the historical meaning of the Delano Transmitting Station. "Located about 140 miles north of Los Angeles, California, the station began shortwave broadcasts to the Pacific Theater of World War II in 1944. In early days, it beamed broadcasts directly to

See NEWSWATCH, page 3 ▶

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World Radio History

Hardis to FCC: Suspend HD-R Rollout

NRSC Attendee Condemns Ibiquity 'Secrecy'

WASHINGTON Jonathan Hardis believes the FCC should rescind its recent "final" IBOC authorization until Ibiquity reveals more technical information about its HD Radio system.

Hardis participates in meetings of the standards-setting NRSC as a representative of the National Institute of Standards and Technology but made his comments to the FCC as an individual.

He wrote to the commission, "During the course of this proceeding, Ibiquity changed their IBOC system and reneged on a vital commitment made in their original Petition for Rulemaking, to provide a complete technical specification."

He pointed to Ibiquity's change of codecs from its originally specified AAC to PAC, then finally to HDC, developed with Coding Technologies.

Hardis argues that use of the HDC codec puts a broadcaster into non-compliance with the IBOC rules, "rendering the installed base of IBOC equipment as unauthorized." He's asking the commission to suspend the rollout until a plan is in place to solve the issue.

Hardis represents NIST on the NRSC. Organizations and companies, not individuals, are the official members of that standards committee. To be eligible for membership, a company must have a direct and material interest in the broadcast industry. Hardis filed his petition as an individual, apart from NIST. An NIST spokesman confirmed the filing is Hardis' personal viewpoint.

Typically, government members abstain from voting on the NRSC and attend meetings more as observers. Indeed, the spokesman confirmed the organization abstained from voting on NRSC-5 and NRSC-5-A.

> **Ibiquity changed their IBOC system and reneged on a vital commitment made in their original Petition for Rulemaking.**
>
> — Jonathan Hardis

Through the spokesman, Hardis said NIST itself has no position with respect to the digital radio rulemaking before the FCC, except as stated in its 1999 comments that "NIST proposes that the commission consider as part of its rulemaking the desirability, appropriateness and technical requirements for standardizing a portion of digital bit stream in these services for the purpose of the continual communication of the correct, current time."

Codec specs

When the NRSC developed technical specifications for IBOC, called NRSC-5, it declined to specify a codec, as Radio World reported at the time.

Ibiquity said then it couldn't reveal details of its codec because to do so would expose trade secrets; also, the company felt there was sufficient transparency in its information to give manufacturers what they needed to know to make equipment.

The leaders of the NRSC said at the time that finalizing the spec without a codec wasn't ideal but preferable to not developing a technical specification at all.

In his petition, Hardis states he brought up these issues two years ago to the commission and was doing so again because he believes they need to be resolved.

"Neither permanent nor continued interim authorization is warranted until the secrecy issue is resolved," states Hardis in the filing. "Ibiquity and its partners need to be sent the clear message that we expect better of them — promises made to the FCC and to the public are promises made to be kept."

Sources on the committee said the commission could easily update the language in the IBOC rules to reflect the codec change without suspending the rollout. The commission, sources told RW, seems satisfied with the information Ibiquity has shared with the agency. Neither Ibiquity nor NAB, the broadcast co-sponsor of the NRSC, had answered the petition with their own filed comments by press time. Ibiquity declined comment for this story.

The FCC dismissed several other petitions for reconsideration in March when commissioners voted on the IBOC authorization.

Another example of a commenter who took issue with the FCC ruling, on somewhat similar grounds, Gregory Olson Smith of Brookeville, Md., wrote shortly after the March vote authorizing IBOC: "The FCC has just given away our free airwaves to a few corporate thugs, including Ibiquity Digital Corp. and the HD Radio Alliance Partners. This FCC sole-source, non-competitive contract award to Ibiquity is a total travesty."

— by Leslie Stimson

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Newswatch

▶ Continued from page 2

local audiences and to retransmitting facilities in Hawaii, Okinawa and the Philippines. Later the station provided critical shortwave broadcasts to Cuba, South America and Asia."

IBB has been closing shortwave transmission facilities in favor of FM and medium-wave radio, the Internet and TV.

News Roundup

CRL/ORBAN: Circuit Research Labs closed on a purchase agreement with Harman Pro North America, putting to bed debts left from the sale of Orban Inc. seven years ago. CRL paid $1.5 million cash for promissory notes and shares owned by Harman. The buyout was funded by Jayson Russell Brentlinger, father of President/CEO Jay Brentlinger.

TRAFFIC, sales and billing software supplier WideOrbit says the industry should prevent the merger of Wicks Broadcast Solutions and Marketron Broadcast Solutions because the resulting company would control 86 percent of the radio traffic, sales and billing software business in the U.S. Higher prices would be the result of such a union, according to WideOrbit, which urged complaints to the Justice Department.

NAB asked the FCC to allow stations to use computer modeling to demonstrate that AM directional antennas perform as authorized. In comments filed to MM Docket 93-177, NAB noted that a coalition of antenna experts, broadcast engineers and equipment manufacturers believes using moment method computer modeling will save engineering time and lessen the financial expenses of maintaining AM DA systems. With the recent authorization of AM IBOC, stations have "out of necessity" become capable of diligently maintaining and optimizing their directional antenna systems, according to NAB.

KENWOOD and JVC have an agreement to join their car electronics and home/portable audio businesses in 2008, in what may lead to a full-fledged merger later. The agreement covers integration of capital, businesses and management. Kenwood said it believes that in mature industries with fierce competition, parties that align can achieve faster growth.

World Radio History

Harris Swims in Some New Channels

"Rather than be a mile wide and an inch deep, we want to go the other way."

So says Chris Pannell, recently promoted to director of North American radio sales at Harris Corp.'s Broadcast Communications Division.

I wrote last winter about the division's direction under President Tim Thorsteinson; since then, there's been more change in how Harris interacts with customers as it tries to expand into smaller markets and focus on developing and selling its own equipment. Long-time customers may be startled by recent changes in its familiar sales methods — moves Pannell is helping to drive.

Pannell has come up quickly since joining Harris as a district sales manager in 2003, winning two promotions in the past year or so. I spoke with him and Mark Goins, radio systems and consoles sales manager, about these changes, which affect any radio engineer who does business with the company.

Partners

Harris, which traditionally sold its manufactured products directly to users, has enlisted approximately 15 outside dealers, distributors and system integrators to form a North American Channel Partners program.

These engineering-oriented companies, distributed around the country, have become an extension of the Harris sales chain and are offering Harris transmitters, studio networking systems, consoles, furniture and STL products. If you're a customer of a Balsys Technology Group, Broadcast Connection or TechNet Associates, to name three, you can now obtain Harris products through that supplier, who can install and maintain the gear.

"We get a lot of phone calls where a guy needs a price on moving an STL dish," Goins said. "It's something we never really did. Now we have a Harris partner who would love to do that." But Harris continues to employ district sales managers, who are compensated for what the partners sell and who act as a resource to them.

For Pannell, the program is aimed at getting "closer to the customer," a phrase he used several times. "We double or quadruple our 'touch points' without having to scale up our head count," though he said the program requires more investment in training.

"Our partners are in smaller markets. We wanted to provide them all the resources Harris Corp. provides but allow them to be the face to the customer," he said. "They can do the commissioning and maintenance but know Harris is behind them." He believes the structure also lets Harris offer more planning support, quicker response times and specialized integration teams.

The partners are bringing in business, Pannell said, introducing projects Harris hadn't been able to tackle before.

The publicly held company is seeking to expand its broadcast business from "national accounts" and direct relationships that traditionally have been its focus. The timing of the change also is due in part to the manner in which HD Radio has been adopted. "You look at a CBS, for instance," Goins said. "They're pretty close to rolling all their HD Radio markets out. Clear Channel is selling off stations and sooner or later they'll be done. Who does that leave? All these smaller and mid-market guys. We need to hit them now and not be late to the game."

(This emphasis can also be seen in the Harris product line, where products are being introduced for smaller budgets or customers who wish to go digital in the future but build conservatively now. Among lines typifying this trend are NetWave consoles, Envoy routers and ZX transmitters.)

Spin-off

Meanwhile, as I detailed last issue, Harris also has spun off to SCMS its "box house" business, the portion of the broadcast division that sold third-party equipment. I'd heard rumors about such a sale for a long time, but Pannell said the idea had been seriously discussed at Harris for about a year.

Though Harris will still carry some gear from companies like ERI, Dielectric and Andrew, it is no longer in the "high-volume, small-transaction" niche. "We want to bring world-class products to market and not focus on having too many plates in the air," Pannell said. Inventory at SCMS "isn't bogged down in our overhead and burden costs and the other accouterments of a publicly traded company"; meanwhile Harris can "focus on our bread and butter. If Giesler Broadcast Supply or Broadcast Connection wants to sell an 8500 [processor], that's great. We want to focus on Harris manufactured items."

You could look at these changes as the "Leitch-ification" of Harris. Pannell didn't use that word but he noted that the broadcast division has spent more than $1 billion recently in acquisitions, among them the company where Thorsteinson had been CEO. "Leitch is a channel-based organization. They provide new high-margin products every 12 to 24 months, with price points that can scale across all market sizes."

'Rebirth'

Harris Broadcast remains headquartered in Mason, Ohio. Several hundred miles away, Quincy, Ill., is still its manufacturing base, where radio and TV transmitters are made, and more recently where console and router manufacturing has moved.

The company is trying to adopt these changes as it absorbs the impact of staff and infrastructure cuts over the past year. Earlier it announced job cuts in radio and TV transmission, to save costs; and it has rejiggered the structure of the broadcast division. As a result, several executives familiar to buyers have left in the past year.

For instance, instead of two business units for radio and TV transmission, the company now has one, run by Phil Argyris. As a result, Deb Huttenberg left the company. "She is going to be missed; she was a phenomenal manager," Pannell said. "She thought it was time to look for some different opportunities." (Huttenberg declined comment for this article.) Others who have left include Jim Hauptstueck, Gary Hardwick and Dale Mowry.

"There's been a redistribution of human capital," Pannell acknowledged. "There have been some job losses; in other instances we've had to put people who were 'underemployed' in other positions."

From the Editor

Paul J. McLane

At the same time, he said, the company is expanding its sales force, including new hiring in Canada. "We're putting dollars behind these commitments in areas we traditionally serve from a long distance. I'm putting human capital in different countries and different places to get closer to the customer and provide more intrinsic value to the customer."

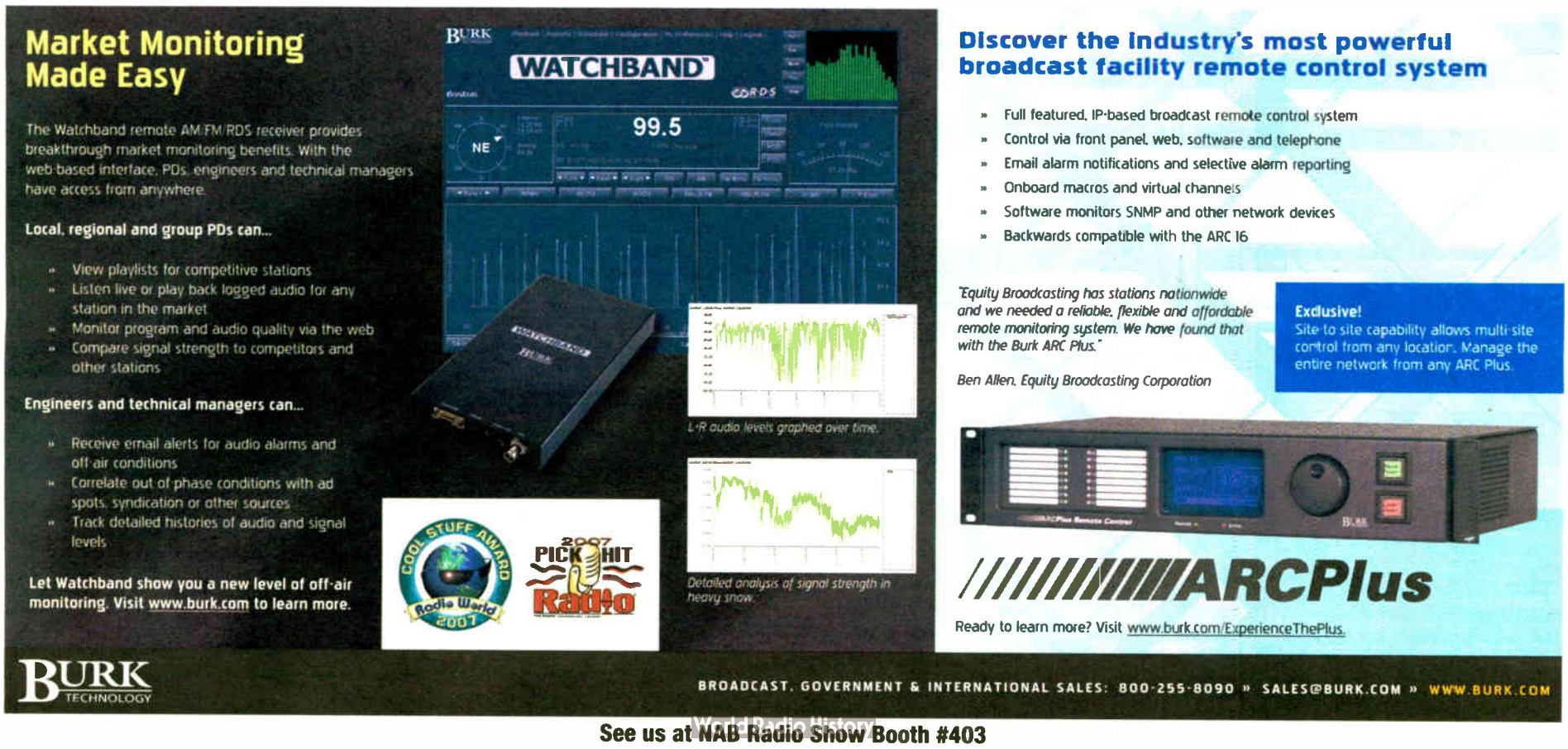
Meantime the company's HD Radio business remains strong; digital transmitter sales, if not expected to leap up in a "hockey stick" growth pattern, will continue to be a "consistent driver," along with ancillary software, services and studios; and as more information needs to be sent down radio's data "pipe," infrastructure products like Intraplex gear will be needed, he said.

I'm impressed by the energy and fresh thinking Pannell exhibits. At the same time I hope he and Harris don't overlook the risk in shifting too much or too far. The company has lost some fine people, and it's not easy to replace that expertise.

Pannell took pains to emphasize that Harris is committed to its core broadcast business.

"Transmission remains our cornerstone. We continue to bring new cutting-edge products to market. We're getting deeper, and going down to markets where we haven't traditionally played before.

"It's a new era," Pannell concluded. "I look at it as a kind of rebirth of Harris radio. We're changing our business model, changing our lines and going forward with people who might have been seen as our competitors a year ago, and now going to market together."



World Radio History

Remotes

▶ Continued from page 1

sometimes exceeding 10 seconds or more.

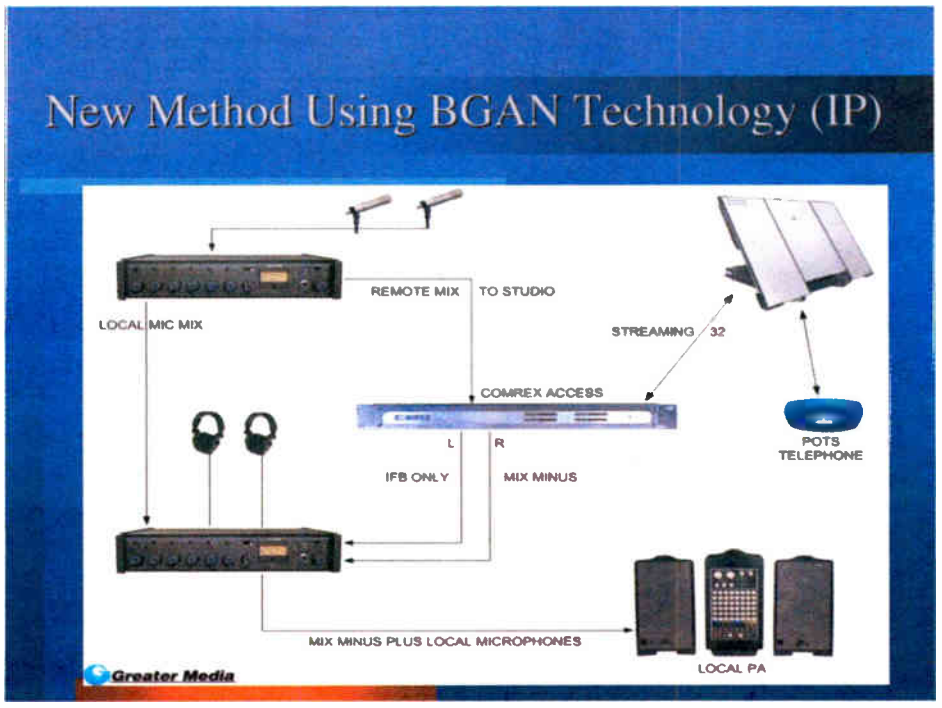
Using a hard-wired Internet connection from a location that has wide bandwidth and an open firewall has turned out to be a good alternative; but even this requires careful planning and a thorough checkout days before the broadcast.

A new satellite service recently has become available to broadcasters in North America from Inmarsat, opening up interesting opportunities for both radio and television broadcasters.

The challenge

Greater Media owns five commercial Class B FM radio stations in the Boston market. As director of technical operations for the Boston Group, I am responsible for making sure that remote broadcasts get done successfully.

With five FM stations the remote schedule can get quite busy, particularly at certain times of the year. Programmers, especially those in the news business, are demanding high-quality remotes, often on short notice, and in some cases in areas where telephone facilities or line-of-sight RPU signals are nonexistent.



Being able to get on the air instantly from just about anywhere on the globe with broadcast-quality audio is an attractive option that has not been available to broadcasters until now.

Looking for alternatives, I purchased an IP codec along with a portable satellite terminal to allow me to get the data back to the studio via satellite and the Internet. The satellite terminal was portable, about the size of a laptop, and was easy and quick to set up and align.

Data rates available on the hardware I used ranged up to 256 kilobits per second. Latency times including the coding, decoding, uplink, downlink and Internet transit time together totaled about one second. While certainly not optimal, it was workable for two-way communications.

Inmarsat owns and operates a network of three communications satellites that form the Broadband Global Area Network service. BGAN offers connectivity to the Internet, POTS lines and the global ISDN network.

One of the advantages of deploying this technology for broadcasters is that BGAN is available just about anywhere, and connection to it requires no planning or advance notice once the user is registered as a subscriber to the service. Depending on the location, satellite look angles can vary quite a bit, but from most locations in North America, look angles are high, giving more flexibility to choosing a location without fear of terrain, buildings or trees being in the way.

The birds

The Inmarsat satellites are positioned in geostationary orbit. They follow a circular orbit in the plane of the equator at a height of 35,600 km, so they appear stationary relative to a point on the earth's surface.

They are controlled from the Satellite Control Center at Inmarsat HQ in London, which is responsible for keeping the satellites in position and ensuring the onboard systems are functional.

A call from an Inmarsat mobile terminal goes directly to the satellite overhead, and is routed back to a gateway on the ground called a land earth station. From there the call is passed into the public phone network or the Internet. Eighty-five percent of the world's land mass is illuminated by the Inmarsat footprints.

Although Inmarsat owns and operates the satellites, distribution partners and service providers supply the value-added connections of the service and the circuit once the transmission hits the ground.

Hardware options

In order to participate in this technology, the hardware on the user end required is usually purchased and the airtime plan is selected. Once registered with the service provider, the system can be used at any time without prior coordination.

Several hardware manufacturers offer options for ground-based terminals. Your selection will depend on several factors including size and portability, durability, ease of setup, maximum data rates desired and price.

Some available terminals are not much larger than a paperback book, and others are as large as a larger laptop computer.

One unit that I decided to gain some experience with is the Thrane & Thrane Explorer Model 700. This particular terminal fit my needs for radio remote broadcasts due to its light weight, ease of setup and high-speed data streaming capabilities.

This model has some attractive features including a rechargeable built-in battery, detachable uplink/downlink panel antenna, POTS phone line capability, ISDN capability and guaranteed data streaming capabilities up to 256 kbps. In addition, the unit can access the Internet at speeds of up to 492 kbps.

Data service options

The core of the BGAN service is IP data connections provided as on-demand streaming or standard IP connections. Streaming services are provided with guaranteed data rates over the satellite of 32, 64, 128 or 256 kbps. Streaming transmissions over the satellite are prioritized requests and are billed by the minute.

Standard IP transmissions can be as high as 492 kbps, but utilize a shared channel that can be dynamically reduced based on the number of users in the particular spot beam of the satellite. Standard IP is billed by the kb for all data transmitted to or from the terminal. Other service options are 64 kbps ISDN, 32 kbps, 64 kbps streaming and POTS voice that are also billed by the minute.

To establish a link to the network, the earth terminal is powered up either by battery or by the included AC power adapter. After a short boot time, the panel antenna can be oriented to look to the sky — generally to the equator — and the azimuth and elevation can be adjusted by hand to maximize the signal strength as indicated on the LCD display on the terminal.

The signal strength is also referenced by an audible tone that changes in pitch in proportion to the quality of the signal. After a short delay, the unit will register with the service provider and a ready indication will appear on the terminal's display.

At this point, you may issue a command to initiate a streaming data connection to the Internet, or place a voice or an ISDN telephone call at 64 kbps. An IP address will be assigned for background IP Internet browsing.

While registering and aligning the terminal will not incur any charges to your account, the moment you initiate a streaming IP connection, the clock starts running and per minute data usage charges will accumulate even if you are

See REMOTES, page 6 ▶

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World Radio History

Remotes

▶ Continued from page 5

not "using" the connection for meaningful audio transfer.

The cost of acquiring the hardware (satellite terminal) can range from about $2,000 to $4,000 depending on the type of equipment desired. The streaming data costs at 32 kbps are running about $2.40 per minute and 64 kilobit ISDN rates are near $5 per minute.

For example, a four-hour remote using 32 kilobits streaming will incur about $576 in satellite time. When this amount is compared to the cost paid to the phone company for the installation and usage charge for a land-line ISDN, the pricing seems to be more competitive. The flexibility and reliability of the satellite service can outweigh the cost if the broadcasts are critical and other options are not available.

Remote control

Since costs can add up fairly quickly for the streaming option of broadcasting, it may be desirable to have an easy way to start and stop the streaming process during certain types of remotes.

For example if a station is just doing "drop-ins" twice an hour, there may be no need to keep the stream running during the entire remote. By supplying a switch closure to the auxiliary port of the satellite terminal you may be able to more conveniently start and stop the streaming process just before and after the talent needs it, thus saving a significant amount of money.

No laptop

One of the concerns I had before deploying this technology was the simplicity of setting up and operating the equipment.

This is one reason I selected a terminal that can be pre-configured with a standard set of parameters; this allows the unit to be used in the field immediately after boot-up, without the need to bring along a laptop computer and a person who can configure the terminal. Not all terminals offer this feature.

Handling the delay

The subject of delay comes up more often these days. We know from working with new digital audio processing, compression and transport that listening off the air or even to a mix-minus from the studio can be a big problem. Any time the delay exceeds 15 to 20 milliseconds, a feed of the talent's voice back into his or her headphones can be distracting or confusing.

Therefore a mix-minus feed containing not only the programming from the studio without the remote audio, but also a mix of the local remote audio must be fed to the talent's earphones at the remote site.

VSAT

Another option for remote communications, Very Small Aperture Terminal communications satellites, has been around for decades. Today most are Ku band (12–14 GHz) used for, among other things, corporate communications and high-speed Internet access.

Many companies offer relatively inexpensive 1.2 meter "flyaway" systems that can be used for remotes. While not as convenient, or as inexpensive at the outset to purchase the hardware for, these systems offer reliable service and upload and download speeds that exceed those of the BGAN network.

The monthly rates for unlimited data transfer can be in the price range of what may be spent on only one or two remotes using the BGAN technology. Although I have not had any experience with these terminals for portable remotes, Greater Media has used them successfully for dedicated point-to-point links to carry program material continuously across the continent at reasonable rates.

The idea of using portable satellite terminals for remote broadcasts has finally come of age. Being able to get on the air instantly from just about anywhere on the globe with broadcast-quality audio is an attractive option that has not been available to broadcasters until now.

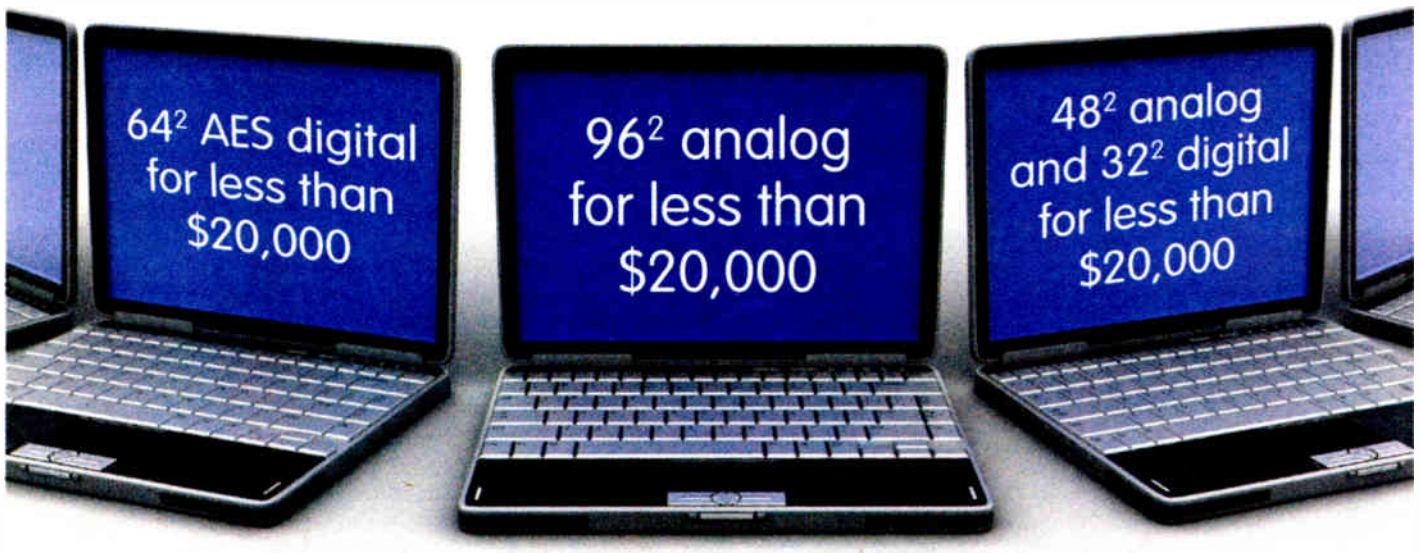
While the operating costs are still a bit high, having the hardware on hand along with an active data account allows a good measure of insurance for radio stations in case the primary method of broadcasting does not work or there is just no other way of doing the broadcast.

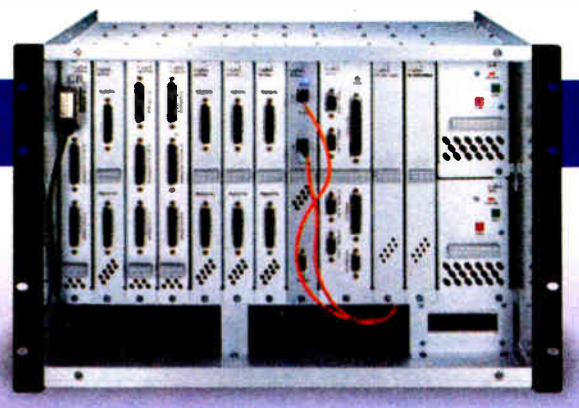
Shulins is director of technical operations for Greater Media, Boston. He wishes to thank his colleagues at Greater Media, as well as GMPCS, Telos Systems, Comrex Corp. and Thrane & Thrane for their assistance.

This article is excerpted from a paper published by the NAB Broadcast Engineering Conference.

A mix-minus feed containing not only the programming from the studio without the remote audio, but also a mix of the local remote audio must be fed to the talent's earphones at the remote site.

$96^2 < \#20K$





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World Radio History

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World Radio History

DIGITAL NEWS

Sirius/XM Buoyed By Financial Trends

Executives for Sirius and XM say their proposed merger will result in more choices and lower prices for consumers. They also say recent financial results and sales trends bolster their argument that satellite radio is just one of many audio entertainment options available to consumers.

Photo by Leslie Stimson

The planned merger of XM and Sirius left no room for Hugh Panero.

If regulators approve the deal and it closes by year-end as the satcasters hope, Sirius CEO Mel Karmazin said Sirius/XM should be able to offer some of its lower-cost subscription packages by Father's Day 2008, and then "a la carte" offerings, which require a new radio, by next Christmas.

Newly announced a la carte packages, to be offered after the merger, allow customers to select a certain number of channels for a set price.

Integrated Chipset Ahead?

In a financial conference call in July, Sirius President of Operations and Sales Jim Meyer said, "If the merger goes through, I'm very positive that we will very, very aggressively go after an integrated chipset."

"The timing of that chipset is probably somewhere between one year and two-and-a-half years, depending on what we decide to feature in it, and we won't be able to begin that work until it's clear that the merger's approved."

Meyer couldn't say how quickly automotive OEM partners would be able to include satellite radios that receive signals from both companies into their vehicles.

Karmazin, however, said, "Our experience with OEMs is they don't want to lose business to the aftermarket. We think they'll be responsive quickly."

Sirius & XM Hope For Year-End Close

Executives at XM said public comments filed to the commission favor the merger 4 to 1. Both companies believe the merger is on track to close by the end of this year or early next.

A 1,000-page filing to the commission refutes some of the "misinformation" from

Summary of Sirius Post-Merger Channel Line Up Proposal

SIRIUS SATELLITE RADIO

OFFERING	# CHANNELS	MONTHLY PRICE: CURRENT	MONTHLY PRICE: POST-MERGER
Sirius Everything**	Approx. 130	$12.95	$12.95
A La Carte I*	Pick Your Own 50 (Optional: Add a Channel @ $.25 Each; Add Super Premium Packages @ $6.00 or $5.00 Each)	$12.95	Starting at $6.99
A La Carte II*	Pick Your Own 100 (Including some best of XM)	$25.90***	$14.99
Sirius Everything & Select XM**	Approx. 140	$25.90***	$16.99
Family Friendly & Select XM	Approx. 130	$25.90***	$14.99
Family Friendly	Approx. 120	$12.95	$11.95
Mostly Music Commercial Free Music (59) Family and Kids (4) Religion (3) Emergency (2)	Approx. 65	$12.95	$9.99
News, Sports & Talk Sports Channels (8) Talk and Entertainment (10) Family and Kids (4) Religion (3) News (13) Traffic and Weather (11) Emergency (2)	Approx. 50	$12.95	$9.99

**Available only for subscribers using next generation receivers who select channels via the Internet.*
***Consumers may block adult-themed content. Consumers who elect to block adult-themed content will be provided a monthly credit.*
****Currently requires two subscriptions.*

A Sirius summary of proposed post-merger a la carte channel and pricing options. NAB called the proposal a 'sham.'

NAB about their proposal, said executives for the satellite companies.

They were referring in part to NAB President/CEO David Rehr, who wrote in a letter to FCC Chairman Kevin Martin, "Sirius and XM announced a series of pledges designed to dress up the proposed merger-to-monopoly as a benefit to the public. But you can't make a silk purse from a sow's ear."

Rehr called proposed a la carte offerings a "shameless attempt to curry the favor of government regulators."

Sirius retorted: "In attacking the new a la carte plans because of the new radios needed to enjoy them, the NAB conveniently ignores the fact that HD Radio, introduced by the NAB's own members, also requires consumers to purchase new equipment to receive the HD signal."

Sirius Q2 Revs Up 51% to $226 Million

Sirius Satellite Radio took in revenues of $226.4 million in the three months ending June 30, a 51 percent increase from a year ago. Its net loss narrowed to $134.1 million compared to $237.8 million a year ago.

Subscriber acquisition costs dropped.

Sirius expects to end the year with more than 8 million subscribers. It said its average monthly subscriber churn for the year will be 2.2 to 2.4 percent.

Subscribers grew during the second quarter, posting a gain of about 561,000 net new subscribers for a total of 7.14 million.

The satellite companies count subscribers differently. XM counts an individual as a subscriber after free payment ends and the person actually signs up; Sirius includes vehicles on dealer lots that have it installed in the dash.

Asked by an analyst what percentage of OEM subscriber additions are cars remaining on dealership lots, EVP/CFO David Frear said 9 to 10 percent.

XM Loss Narrows; Net Subs Down

XM reported a smaller net loss and higher revenue for its quarter, compared to a year ago, citing high OEM subscribers. Yet churn rose and retail sales continue to soften.

The satcaster reported $277 million in revenue, compared to $228 million in the second quarter of 2006. Quarterly net loss narrowed to $176 million from $229 million.

Adjusted operating loss was $47 million compared to a loss of $46 million in the same period of 2006. The 2007 second quarter adjusted operating loss includes $4 million in expenses related to the pending merger with Sirius.

XM ended its quarter with about 8.25 million subscribers. In the three-month period, it recorded gross subscriber additions of 942,000 and net additions of 338,000.

The company says it converted 53 percent of new car buyers whose vehicles came with XM into subscribers. Automotive customers made up 618,000 of the gross subscriber additions, the highest ever in a quarter, said outgoing CEO Hugh Panero.

Price Options, Packages Detailed

The satellite radio companies announced eight programming options they propose should their merger be approved.

Critics say there's nothing stopping satcasters from offering these options now. However both Mel Karmazin and Gary Parsons said they can only offer the lower prices with efficiencies made possible by the merger.

Of the eight post-merger programming options, two are a la carte, in which subscribers can select a certain number of channels for a set price. One option will allow subscribers to choose 50 channels for $6.99; the current subscription rate is $12.95. Under this option, customers will also be able to include additional channels for 25 cents each.

Under the second a la carte option, subscribers would be able to choose 100 channels for $14.99 per month. The plan would allow Sirius customers to select some XM programming, and vice versa.

Subscribers to a la carte options who choose programming from the other service would need a new radio. Karmazin said the company hopes to have the radios and programming options completed within a year of merger approval.

A combined Sirius-XM would also offer several other new programming packages, including two "family-friendly" options. Those choosing one would be able to block adult-themed programming and receive a price credit. Karmazin referred to the blocking and credit concepts in congressional hearings earlier this year.

The packages would range from $6.99 to $16.99 per month in subscription costs. Non-a la carte programming would be available within six months of merger, the companies said.

NAB Slams Satellite Companies' A La Carte Pitch

NAB reacted with strong words to the satellite a la carte pricing plan.

It released an analysis that it says shows that "under every programming packaging offered through an a la carte scheme, consumers will be charged higher prices per channel than they currently pay. The price increases under a merger, NAB said, would range from 40 to 188 percent.

"Moreover, both a la carte packages offered under a merged entity would include onerous restrictions and limitations preventing consumers from enjoying true a la carte choice. Plus, consumers would be required to buy a new radio to enjoy additional pre-selected channels from both XM and Sirus."

NAB officials said they would present their analysis to FCC commissioners and staff as well as the Justice Department.

"If 'a la carte' is intended to mean more choice and lower prices, XM and Sirius fail the test," a spokesman stated.

"Only in a monopolist's world are 50-channel minimums, higher prices, interoperability restrictions and a required hardware upgrade considered a consumer benefit."

Premium Channels Defined

Sirius and XM clarified what would be considered premium channels in the new subscription plans.

The Sirius Everything package would have nine premium music channels,

See DIGITAL NEWS, page 16 ▶

World Radio History

Feature packed.

(Kind of like our ads.)

Go (con)figure • The folks at MPR say they really love being able to configure and administer an entire building full of consoles and routing equipment from the comfort of their own offices. Put an Internet gateway in your Axia network and you can even log into Element (or any other part of an Axia system) remotely from home, where there's plenty of Cheetos and Pepsi. Great for handling those 6 P.M. Sunday "help me!" phone calls from the new weekend jock.

Who are these guys? • Why buy a console from Axia? Element was designed by Mike Dosch and his team of ex-PR&E renegades (who know a bit about consoles). And Axia is a division of Telos, the DSP experts

Perfect timing • You can't have too much time. That's why Element's control display contains **four different chronometers**: a digital time of day readout that you can slave to an NTP (Network Time Protocol) server, an elapsed-time event timer, an adjustable count-down timer... and there's also that big, honkin' analog clock in the center of the screen (Big Ben chimes not included).

Screen play • Use any display screen you choose, to suit your space and décor. Get a space-saving 12" LCD, or go for a big 21" monster. (This is Dave Ramsey's favorite Element feature, by the way. Anyone want to bet he bought his monitors on sale?)

Lovely Rita • LED program meters? How 1990's. SVGA display has lots of room for timers, meters, annunciators and more — enough to show meters for all four main buses at once. Reboot to 5.1 surround mode and the light show is even cooler, with surround audio and associated stereo mixes all going at once.

Memory enhancer • We know how forgetful jocks can be. That's why Element remembers their favorite settings for them. Element's Show Profiles are like a "snap-shot" that saves sources, voice processing settings, monitor assignments and more for **instant recall**. Profiles are easy to make, too: just have talent set up the board the way they like it, then capture their preferences with a single click for later use. (Hey, make *them* do some work for a change.)

Black velvet • Some things **just feel right**. Like our premium, silky-smooth conductive plastic faders and aircraft quality switches. We build Element consoles with the most durable, reliable components in the industry — then we add special touches, like custom-molded plastic bezels that protect on-off switches from accidental activation and impact. Because we know how rough jocks can be on equipment. And nothing's more embarrassing than a sudden case of *broadcastus interruptus*.

Split decision • No, you're not seeing double: Element gives you the choice of single-frame or split-frame configurations of **up to 40 faders.** Perfect for complicated talk or morning shows where the producer wants his own mini-mixer, or to give talent space for copy, newspapers and such. Solomon would be proud.

Swap meet • Element modules hot-swap easily. In fact, the **entire console** hot-swaps — unplug it and audio keeps going; an external Studio Engine does all the mixing.

Stage hook • This button activates the emergency ejector seat. OK, not really. It's the Record Mode key; when you press it, Element is instantly ready to record off-air phone bits, interviews with guest callers, or remote talent drop-ins. One button press starts your record device, configures an off-air mix-minus and sends a split feed (host on one side, guest on the other) to the record bus. Like nearly everything about Element, Record Mode is **completely configurable** — its behavior can even be customized for individual jocks. Sweeeet.

How many? •
How many engineers does it take to change these light bulbs? None... they're LEDs.

Talk to me • Need some one-on-one time with your talent? Talk to studio guests, remote talent, phone callers — **talk back to anyone** just by pushing a button.

Missing features • Did we forget something? Program these **custom button panels** with any macro you want, from recorder start/stop to one-touch activation of complex routing and scene changes using PathfinderPC™ software. You could probably even program one to start the coffee machine (black, no sugar, thanks).

Great Phones • With Element, jocks never have to take their eyes or hands off the board to use the phones. Element works with any phone system, but really clicks with the Telos Series 2101, TWOx12, and new NX-12 that connects four hybrids plus control with a **single Ethernet cable.** StatusSymbols™ (cool little information icons) tell talent at a glance whether a line is in use, busy, pre-screened, locked on-air, etc. Even dial out with the built-in keypad.

The Busy Box for jocks • Element comes standard with a lot of cool production-room goodies you'd pay extra for with other consoles, like per-fader EQ, aux sends and returns and custom voice processing by Omnia™, enabling you to quickly build and capture compression, noise gating and de-essing combinations for **each and every jock** that load automatically when they recall their personal Show Profiles. Context-sensitive SoftKnobs let production gurus easily tweak these settings, while simultaneously satisfying their tactile fixations. (Don't worry: for on-air use, you can turn off access to all that EQ stuff.)

Mix-plus • If constructing a complicated mix-minus on-the-fly brings a big grin to your face, you're excused. But if you're like us, you'll love the fact that Element does mix-minus **automagically**. Forget using all your buses for a four-person call in, or scrambling to set up last-minute interviews. When you put remote codecs or phone calls on air, Element figures out who should hear what and gives it to 'em - as many custom mix-minuses as you have faders.

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Element

Shown: 16-position split-frame Element, nicely equipped, $12,558.00 US MSRP. Not shown but available: 4-, 8-, 12-, 16-, 24- and 28-position Element. Dual exhaust and whitewalls optional at extra cost.

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World Radio History

Trees Don't Improve AM Propagation

by John Bisset

Yes, there's actually a tower amidst the trees in Fig. 1 — a transmitter building too.

An important reminder to have the transmitter field mowed regularly. Even if this area were cleared, a new ground system probably is warranted because the shrub and tree roots could not be removed without destroying the buried ground radials.

It's amazing how quickly small saplings grow. Maybe it's the RF!

Fig. 1: Avoid a fine and improve your signal. Keep tower base growth to a minimum.

Schedule bushhogging now, at the end of summer season. Black landscape plastic or fabric under crushed rock at the base of each tower will reduce growth and protect your ground system.

Thanks to Bill Weeks of Hungry Wolf Electronics for his mowing and tower base suggestion. He can be reached at *bill@wolftron.com.*

★★★

When was the last time you walked your tower site? Are guy anchor points fenced in? If not, are they weed-proofed with crushed stone, as seen in Fig. 2?

Most important are the turnbuckles. Looping and securing guy wire strands through the turnbuckles may not eliminate vandalism altogether but it certainly discourages the act. Add a yellow shell around one of the guys, as seen in the photo, to help identify it in the middle of a field if there is no fence protection.

Fig. 2: Pay close attention to guy anchor turnbuckles.

★★★

Fig. 3 shows a Knox-Box used by Paul Shulins of Greater Media's Boston cluster. Since 1975, Knox, an Arizona company, has provided rapid-entry systems used by thousands of fire, emergency and government agencies.

The box can be opened by the emergency responder, who doesn't have to wait for the property owner or break down the door in the event of a fire or other emergency. The Knox-Box padlocks and vaults come in a variety of sizes — big enough to hold building plans, if needed.

If your local fire department does not use Knox-Boxes, the company can help get the program

See MOTOR, page 11 ▶

Fig. 3: Use the Knox-Box to provide site access for emergency crews.

NEW! A Box for All Seasons!

An all-digital Stereo "Utility Processor" for leveling and peak control

Inovonics' 261 is the ideal, low-cost solution for "whatever ails you" around the broadcast plant. It combines gated, gain-riding AGC, platform-based average level compression and tight 'look-ahead' peak control. Use it to tame a mic channel, to normalize levels between music and voice tracks, to protect an STL or for streaming.

Menu-driven setup is quick and easy. Processing functions may be enabled independently or combined for a comprehensive leveling system. Basic parameters are adjustable, but not to an extent to ever get you into trouble. Front-panel alarms and rear-panel 'tallies' signal dead air and out-of-limits conditions.

The 261 accepts analog or digital inputs and gives analog and digital outputs simultaneously. Its DSP-based design is simple, straightforward and sonically colorless.

Model 261 – $1150

For full technical details, visit

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World Radio History

Motor

▶ Continued from page 10

implemented. Paul uses the Knox-Box at his transmitter sites. More information can be found at the company's site, *www.knoxbox.com.*

★ ★ ★

Necessity is the mother of invention, 'tis said. How true this is among broadcast engineers.

Loud and Clean Broadcast Engineer Grady Moates was on one of those rare vacations, not far from a client site, and got a call. He found himself troubleshooting a "missing audio" problem. He had no butt-set, no little battery-operated $12 amplified speaker from the Shack, so he felt handicapped.

Then he remembered the Bose QuietComfort 2 noise-canceling headset he'd brought along on the flight. He ran to his suitcase and pulled them out. Approaching the male XLR with trepidation (will this really work?), Grady turned the QC2 power switch on and stuck the mini plug in the open end of the connector between Pins 2 and 3.

He heard clear, clean audio at a comfortable level. Tracing back through 66 blocks was a breeze, too, because the little mini plug fits between the punch-pins nicely.

Grady found the problem quickly and looked like he knew what he was doing (always a plus).

Now he keeps a pair of QCIIs in his tool kit. They clip onto his head (nothing to keep a hand busy, no need to look for a place to hang); the little slide switch on the removable audio cable has a "hi-lo" switch that sets input sensitivity for +4 (low gain) or –10 (high).

These headphones cancel out the low-frequency noises you get in rack rooms and transmitter sites, and sound pretty good, he tells us. You'll also find the QCIIs light, comfortable and small. They come with their own little carrying case, with room in a zipper pouch for a clip-lead adapter and a 110 block adapter that Grady made.

One of the best features, though, is they don't appear to load pro audio circuits at all.

Grady Moates can be reached at *grady@loudandclean.com.*

★ ★ ★

Here's a tribute to a piece of equipment that seems to have at least nine lives.

Mark Ward with WTSN(AM) and WBYY(FM) in Dover, N.H., writes that there is a Hughey & Phillips motorized tower light controller at the FM site. The device uses a clock motor to drive a cam wheel that operates the beacon flasher; the wheel rocks a mercury switch, turning the beacon on and off.

It's very old technology but it works just fine until the clock motor dies.

Hughey & Phillips was acquired some years ago by Honeywell Inc., which eventually quoted Mark a price of just under $500 for a new motor. This struck Mark as a tad expensive.

Digging further, he found that the original motor had been manufactured by Synchron, which is still in business. They referred Mark to Essex Product Group/Industrial Timer Corp., which sent an exact replacement for less than $100 including shipping. The clock motor was replaced and the tower light flasher is back in business.

I serviced a station in my contract engineer days that had a problem with this type of older flasher. In my case, the mechanical linkage that connected the motor to the rocking mercury switch simply had worn out. When you replace a defective motor, check also to see that the mechanical linkage isn't worn, and that the electrical leads from the mercury switches aren't rubbing the inside of the box.

On the subject of tower lights, Mark suggests that readers check the validity of the telephone number for their nearest FAA Flight Service Station. The local FSS in his region changed its number (and procedures) awhile back; it took quite an effort to get hold of them when this beacon flasher went out. To make matters worse, a local airport gave him the outdated number!

Mark's advice: Check the number now before you need it in a real tower lighting emergency. Mark Ward can be reached at *mark@am1270wtsn.com.*

John Bisset has worked as a chief engineer and contract engineer for 38 years. He is the northeast regional sales manager for Broadcast Electronics. Reach him at (571) 217-9386, or jbisset@bdcast.com. *Faxed submissions can be sent to (603) 472-4944. Submissions for this column are encouraged, and qualify for SBE recertification credit.*

Letters to the Editor

Radio World welcomes your point of view on any topic related to the U.S. radio broadcast industry. Letters should be 100 to 300 words long; the shorter the letter, the better chance it will be published in full. We reserve the right to edit material for space. Longer commentaries are welcome but may not reach print as quickly.

Include your name, address and contact information, as well as your job title and company if appropriate.

Send letters via e-mail to *radioworld@imaspub.com*, with "Letter to the Editor" in the subject field; fax to (703) 820-3245; or mail to Reader's Forum, Radio World, P.O. Box 1214, Falls Church, VA 22041.

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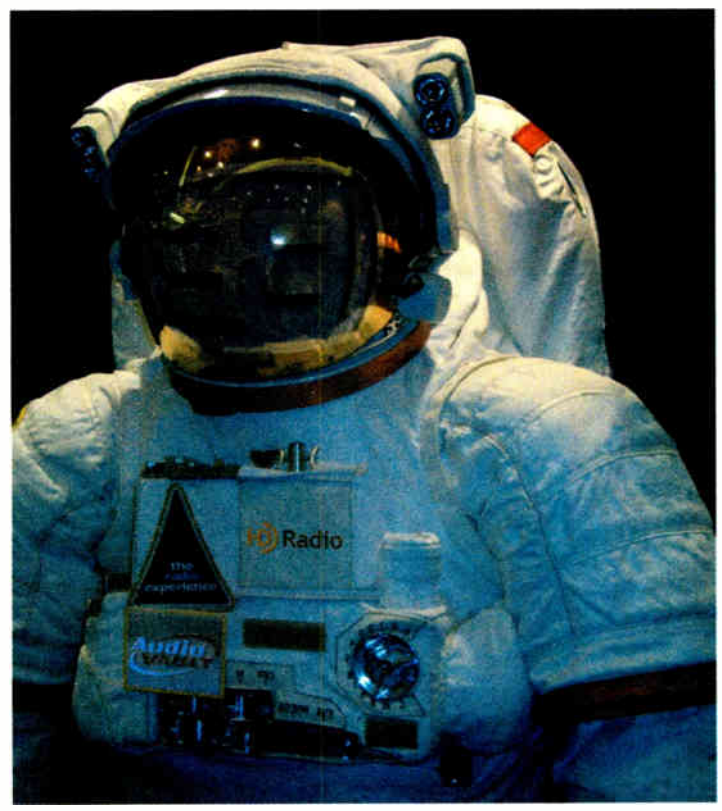

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World Radio History

Subscription Radio Gets Real

Whether or Not the FCC Allows It, HD Radio Is Ready for Subscription Service

The Big Picture

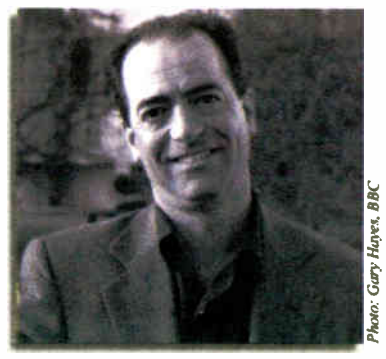


Photo: Gary Hayes, BBC

by Skip Pizzi

We conclude our examination of the remaining unknowns of IBOC with a look at RadioGuard, the conditional access system proposed by Ibiquity Digital for use on HD Radio subscription services, which if the FCC's IBOC rules eventually permit, could be the primary mechanism for radio subscription service delivery.

First, a word about conditional access, or CA: This is a generic term for any technology used to block access to a broadcast channel. Its original development was largely enabled by the analog cable TV industry, where it has been used to distinguish premium ("pay") channels from basic cable services for many years.

Today's digital cable and satellite TV systems offer further CA sophistication, but the basic concept remains the same as always: Premium channels are protected by encryption when broadcast from the head end, and individual receivers in the homes of customers who subscribe to these services are authorized via communications from the head end to selectively decrypt the appropriate channels.

Entitlement

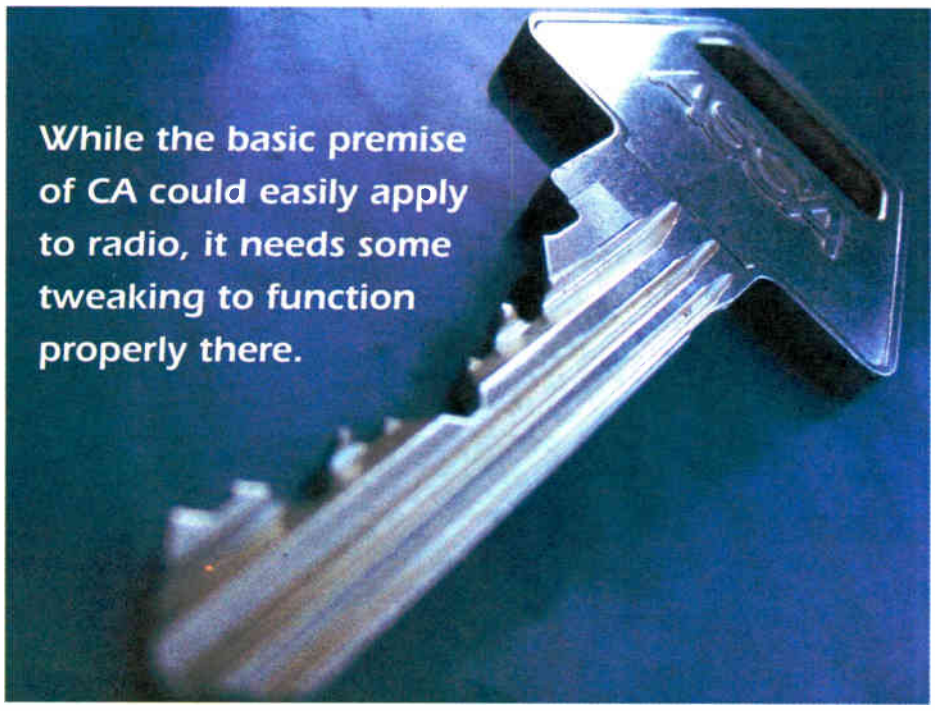
The fundamental functions of a CA system therefore involve 1) the encryption of protected content, and 2) the management and delivery of "keys" to allow the decrypting hardware at the customer's premises to appropriately decode a given channel's audio and video signals. (These keys are often referred to as "entitlements.") An interface to subscription and billing systems typically is also required, of course.

Most CA systems break an encrypted channel's content into a sequence of short, contiguous elements, generally each a few seconds long, and encrypt them separately, with each section requiring a different key. This prevents a protected channel from being hacked by the cracking of a single key, and thus requires the flow of entitlement data to be nearly continuous throughout the viewing period for that channel.

Naturally, this entitlement data takes up bandwidth on the delivery system, so there is a value to its minimization. On the other hand, the more data that is applied to the entitlement (i.e., the longer the keys), the less vulnerable the channel will be to hacking. Thus today's CA systems earn their salt by providing an appropriate balance between robustness and efficiency.

Note also that many of today's television CA systems take advantage of the return path offered by the telephone modem on the receiver, or via a bidirectional cable system.

Lastly, it is important to distinguish between CA and *digital rights management* or DRM systems, the latter of which are typically used by music download services. CA limits a receiver's access to certain *channels* on a multichannel service, whereas DRM is bound to a particular piece of *content*, and controls the user's access to that content for playback.



So while often considered together, CA and DRM are quite different in their application: For example, DRM can prevent a downloaded song to be copied or played on an unauthorized device, while CA can prevent a receiver from outputting content carried on a channel to which it is tuned. Further, CA typically is limited to the consumer's terminal device (receiver), whereas DRM is intended to be continuously bound to content as it passes through the consumer's digital media ecosystem.

While the basic premise of CA could easily apply to radio, it needs some tweaking to function properly there. Ibiquity has worked with one of the top names in the CA world, a Rupert Murdoch company named NDS, to produce the RadioGuard system for HD Radio.

Radio is different

First, this system assumes that there will never be a back channel (i.e., return path) available. Unlike most of NDS's other implementations such as DirecTV, which are large, wideband, multichannel video services from a single provider and head end, the RadioGuard system must operate in an environment where each program channel it is used on typically originates from a separate service provider and transmitter. Thus there is no economy of scale for overhead (i.e., no bundling of channels as in a cable or satellite TV system), and bandwidth is far more constrained in general.

The RadioGuard system therefore places very high priority on efficiency and scalability, while also attempting to keep latency low. (In a CA context, the latter refers to the time it takes between signing up for a subscription service and the protected audio signal playing on the new subscriber's radio.)

Like other CA systems, however, RadioGuard adds two new elements to an IBOC multicast signal: *encryption* and *entitlements*. Ibiquity claims that the encryption will add about 1 kbps to the audio signal, while another 1 kbps or so is reserved for the channel's entitlements. The latter should handle tens of thousands listeners/hour, with a latency target on the order of several seconds to a few minutes.

Regarding latency, this could become another issue specific to radio, in cases where an announcement on (free) air about availability of an event on a subscription multicast channel (e.g., a live concert) causes a rush of listeners to momentarily flood the system. Such "impulse buying" is rare in the TV world, but could become common for radio, so the system is designed to accommodate this without excessive latency by temporarily increasing the bandwidth allocated to entitlements. Ibiquity and NDS are still working on real-world modeling of this system aspect.

Of course, it is always possible to avoid this rush by stations' announcing (and listeners' subscribing) in advance of any event. Entitlements for specific events (as opposed to full-time channels) can be stored and will be maintained on the authorized receiver in non-volatile memory.

Putting it to use

Besides the obvious pay-channel or pay-event application, some have considered the use of a subscription service as a

See SUBSCRIPTION, page 14 ▶

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World Radio History

SUPPLY SIDE

X-Digital Seeks Network Migration

Supply Side is a series of occasional interviews with suppliers in the news. Ian Lerner is president and CEO of San Diego-based X-Digital Systems Inc.; he spoke with RW via e-mail.

Who is X-Digital?

X-Digital Systems Inc. designs, manufactures and sells satellite and terrestrial multimedia communication systems. We have 14 employees in the United States and two in Japan. We specialize in advanced communications systems for both wireless and wired applications. We have focused on both satellite and cable technologies in the U.S. and Japan.

Our primary market is broadcast audio. Unlike other telecommunications companies, XDS has pursued audio-centric applications.

X-Digital recently picked up assets of StarGuide Digital Networks from DG FastChannel and you got a license for StarGuide patents. What is your history with StarGuide and what does this acquisition mean?

A few of the founding members of XDS are also founding members of StarGuide (then Virtex).

At StarGuide we were the development and technical team that designed and manufactured the SGII and SGIII products and systems. In mid-2003 we, as a group, decided to leave and form X-Digital to pursue pure technology-related business to pursue opportunities, initially in Japan.

By 2005 our attention was refocused to the U.S. network broadcast radio market. By mid-2006, ABC Radio (now Citadel Communications) selected X-Digital to provide the next generation of satellite receivers, head end and services for their network-wide distribution system.

In early 2007 we entered into an agreement with DG FastChannel to acquire certain assets of StarGuide. With the StarGuide assets and certain intellectual property, it would allow us to build the next-generation platform with some backwards compatibility. This is a strategic decision and has worked well for our customers.

It is very hard for a station or a network to switch technology platforms. Customers need the old technology, but they know that newer technology will require them to phase out their legacy systems. Our new X-Digital PRO4-SG receiver enables customers to operate on both StarGuide and XDS platforms, so the decision to migrate to the improved technology becomes easier.

Ian Lerner

It seems the radio industry is undergoing one of its occasional reworkings of the satellite delivery infrastructure.

Yes, the radio industry seems to be on an 8- to 10-year cycle.

From SA to SGII/ SGIII and now to X-Digital's PRO4, X-Digital offers new disruptive technology that enables networks to do several things.

First, to copy split — achieve spot insertions in specific time segments and targeted to a specific receiver. So for the first time a network can sell ads targeted to specific stations, markets or day parts, thereby being able to charge a premium to targeted advertising.

Second, to time shift — our internal Flash storage enables networks to broadcast a program once rather than three times to account for the time zones in the United States — thereby reducing space segment transmission costs.

How is X-Digital's business plan better than the model StarGuide followed in the past?

While at StarGuide we realized that given the long purchase cycle of the radio industry it was not sustainable to simply sell equipment and wait 10 years until the next purchase.

At XDS we formulated a model that is based on long-term service rather than equipment sales. We are offering plans that allow the networks to contract with us for a full turnkey network solution. The customer enters into a contract with us for a long-term service plan that includes the distribution equipment, software, support and service.

This has been well received by customers because they don't have to make a large cash outlay. At the same time, it provides X-Digital with a sustainable business model. With the service model, our goals are aligned with our customers', so as we develop new innovations, they benefit, and our customers have an incentive to provide us input and suggestions for improvements. So in a sense the model is more like a partnership rather than the old vendor-purchaser model.

'At XDS we formulated a model that is based on long-term service rather than equipment sales.'

One of the future services we are developing is off-air monitoring and some other exciting industry-wide services that we are able to disclose yet, but are geared toward expanding the ease and reliability of radio advertising.

The XDS-Pro4 is the first in your line of receivers. What sets it apart?

The PRO4 is based on technology we developed for the Japanese market. It is designed as a low-cost communications appliance. It is also highly integrated with many features built in to the base model.

Many of our competitors use a PC platform with specialized PCI cards to achieve the functionality needed for the radio market. This approach limits the cost targets compatible with today's cost-sensitive radio networks. Supporting PCs in the field is also not as robust as our receivers.

The PRO4 is fully featured with onboard VLAN for Internet-ready access, four analog and digital interfaces and onboard Compact Flash storage. It is automation-ready with both relay outputs and optical inputs and a DVB-S L-Band satellite receiver. All of this is done on a single motherboard using our proprietary IP, which helps keep the cost low.

Satellite distribution has used MPEG I Layer II or Layer III for over a decade. Are you offering new audio algorithms for improved quality at the receiver with higher efficiency?

Yes, we are very excited about our DSP architecture. We are able to decode multiple formats including MP2, MP3, AAC and WMA. We realize that in today's Internet-driven codecs we must maintain our compatibility. We design a high-powered digital signal processor into the code of the PRO4. This allows us to not only support multiple compression formats but also allows digital mixing, trans-coding and other audio manipulation.

What does the newest generation of satellite receiver technology offer that past systems didn't?

Our key difference is the internal patent-pending architecture. We have designed the PRO4 to be completely IP-based.

What I mean is that not only does it communicate with devices outside the box using IP; we use IP inside the box too.

For instance, the satellite receiver circuit transfers IP audio to the DSP circuit. This all happens with the internal LAN inside the PRO4. We have built an Ethernet switch to manage internal communication between all the sub-systems. This also allows maximum flexibility for

See X-DIGITAL page 16 ▶

Subscription

▶ Continued from page 12

free "frequent listeners" perk, whereby audience members who sign up (and provide demographic or other data, for example) on the station's Web site are rewarded with exclusive access to certain content, either full time or occasional, and probably commercial-free. Public radio's "pledge-free channel" during on-air fundraising periods is a similar concept.

Regarding entitlement logistics, NDS will handle key management centrally, but all listener subscriptions will be handled by individual stations (or third parties they may assign to this purpose), using the sign-up method of their choice — call-in (automated DTMF or live operator), Web page, etc. All such public-facing elements will in turn use a private, secure Web-based interface to the central NDS key management system, which will return authorizations, also via Internet connection, to each station's entitlement generator — a 1 RU device that stations will need to purchase from NDS and interface to their IBOC data importer. (Ibiquity will not charge additional licensing fees beyond the standard HD Radio data license for use of RadioGuard.)

At the listeners' end, the sign-up process requires the input of their radios' ID number, which will either be printed on the receiver's box or labeled on its chassis, and/or it can be displayed on the receiver through a series of menu commands. Alternatively, when a user with a RadioGuard-enabled receiver tunes to a protected service, the display will render a message such as, "Call 1-800-555-NNNN to activate ...Your radio ID is 123456789."

Importantly, users with legacy receivers that cannot access such services will not display this or any other notification that a subscription service is available. This avoids the poor user experience that would result from listeners knowing something is being broadcast that their receivers cannot access.

Finally, regarding product availability, Ibiquity reports that software is complete and new HD Radio chips that include RadioGuard will be ready for implementation in receivers by later this year. Some first-generation devices will require an add-on chip to provide the radio's ID number, but it is expected that by mid-2008, most if not all HD Radio chips will simply include RadioGuard as standard — just as multicast was incorporated into all HD Radio receivers from the second generation onward.

If all goes according to plan, yet another pipe dream may become part of radio's routine reality soon.

See related story, page 20.

Skip Pizzi is contributing editor of Radio World.

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World Radio History

X-Digital

▶ Continued from page 14

future features. If we need to add a new card or device, we simply connect it to the internal LAN.

You pitch features like copy splitting and targeted ad insertion. Engineers express interest in additional features. Do you support Internet back channels from the receiver to the uplink for authentication, updating and remote management? Receiver management at the receive station level via Ethernet connection? E-mail alarms and event notification from the receiver?

Yes, we actually offer all these features and much more.

Our receiver is fully integrated with the head end. It is part of the larger system. A station can log on to the X-Digital Network Management System, or XNMS, to manage their head end and to configure output schedule and the relay maps in the receiver at the stations. Network managers or engineers can schedule what programs come out of which ports and at what time. It is completely dynamic, with a direct IP connection back to the XNMS. Almost like a virtual network.

If a station is a Rush affiliate and they would like to delay the time when they would like to air his show, they simply log on to the head end and schedule it in, given they have proper authorization and permission from the network.

Describe your relationship with Clear Channel including Premiere Radio Networks and Clear Channel Satellite.

Clear Channel Satellite Services is X-Digital's distribution partner. Early this year we strategically decided CCSS is well suited to sell and distribute the XDS-PRO4 line. They are already a SGI-II distributor so they already have sales and support.

Premiere Radio Networks has recently contracted with us to supply them with the next-generation system for all of their affiliates. We have kicked off our integration to tie into their back-office systems and then we will begin the rollout of the PRO4 receivers.

You've won a contract with Premiere to provide receivers. What other companies have signed on?

In the U.S. we have contracted with PRN and ABCRN. We also have deployed some state networks and independent networks with our partners CCSS.

Are you getting into verification of spots and programs? If so, why — it seems like that market is saturated with offerings.

Yes. We realize that many others have entered this space, but our customers have requested to provide them certain services to leverage the distribution system we already have in place.

We have a new approach and new technology that will completely change the way off-air is done. Again, we are borrowing very innovative technology from our Japanese products that will allow us to monitor and process off-air signals in a highly efficient way. Because we are tied into the networks, we are able to consolidate and reconcile the information from our off-air monitoring system. We will close the loop from spot ingest to distribution to insertion to off-air and back to billing.

How much lead time will engineers likely get from the satellite programming providers regarding the transition from StarGuide receivers to a new technology platform?

Each network has its own schedule. The station should contact the affiliate relations department to get an idea.

How big are the new receivers physically? One engineer tells us, "We are running out of space in our terminal room."

The XDS PRO4 is two rack units in height (2RU) and about 14 inches deep. Once we replace the SGII and SGIII systems they should be able to recover some space.

Will SGIII receivers become obsolete after providers switch to a new platform? Will there be any market or resale value for them?

It really depends on the networks. I believe that the SGIII platform will continue for at least two more years. Each network will have its own rollout schedule.

Will stations need better LNBs or different-sized dishes to work best with the new receivers?

We believe not. We designed the front end of the PRO4 to be compatible with most of the existing infrastructure deployed in more than 13,000 radio stations.

How much will the new technology depend on the Internet for co-ordination or backup downloading activity? Will the receivers' TCP/IP function need to become joined to a station LAN as a member device like the new HD Importers/Exporters and exciters?

The PRO4 will be used by the networks with Internet connectivity. This is an operational decision that is made by each network. The PRO4 can be installed inside or outside of the firewall at the station because it has its own built in LAN switch.

Do you recommend acquiring "hot-standby" backup receivers for the new platform, or will the smart receivers likely be as reliable or more reliable than the StarGuides?

The last receivers this team developed are now 8 years old. I hope that the PRO4 will have a similar lifespan from a technical point of view. A backup receiver is always a good idea. Each station should assess the risk of a failure and make its own determination.

How much will the monthly service contract cost a station on a per-receiver basis?

The service fee is dependent upon the receiver selected, the network's head-end equipment and service requirements, their need for redundancy, the term of the contract and the timing or urgency of rollout. We typically quote each network using its own requirements.

What else should radio engineers know?

We have worked hard to make this a simple installation for first-time users, or a simple migration for those folks who are upgrading from StarGuide receivers. If the equipment is purchased from ClearChannel Satellite Services, they will provide installation support. If the equipment is purchased directly from X-Digital, we will provide telephone support and online we provide technical documents and user's manuals.

How can readers get more information?

Our Web site *www.xdigital.com* provides contact information. It also posts datasheets on both the PRO4 receiver and headend equipment. We will be also posting the PRO4 Receiver User Manual.

Digital News

▶ Continued from page 8

including those for the Metropolitan Opera and Frank Sinatra, and 11 premium entertainment channels, including two Howard Stern channels, Martha Stewart, Playboy and Out Q, a gay channel. The Sirius A La Carte II option allows subscribers to choose from those 11 premium channels.

The XM everything package includes 10 premium music offerings, such as the Willie Nelson channel and eight premium entertainment channels, including Oprah. In the A La Carte I option, Oprah as well as Opie & Anthony are considered super premium channels.

In the A La Carte II option, there are 10 premium music and eight premium entertainment channels.

Panero Exits XM

Hugh Panero announced he would leave XM Satellite Radio in mid-August.

When he began at the company nearly a decade ago, "the company was basically a PowerPoint presentation," he said, recalling he spent much of his time convincing people that the public would pay for radio.

His departure comes earlier than expected; when the merger was announced in February, the satellite radio companies indicated that Panero would remain until the deal closed.

Under the merger proposal, Karmazin would serve as CEO of a combined company and XM's Gary Parsons would be chairman, leaving no role for Panero.

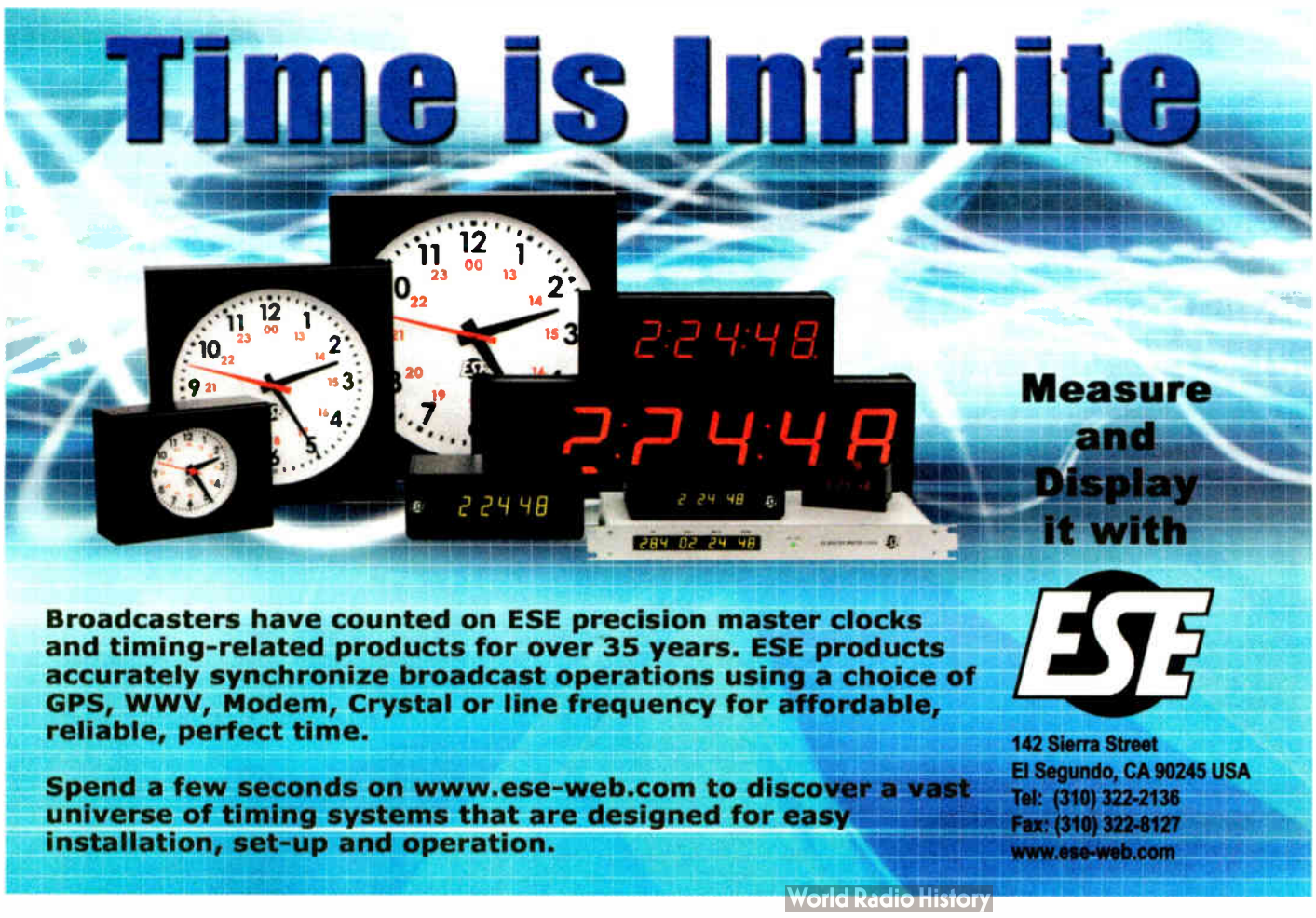
Nate Davis, now XM president/COO, will serve as president and interim CEO; Panero brought Davis on after a board member left citing concerns about XM's spending and the company began to miss its earnings guidance for several consecutive quarters.

Panero gave no indication of his plans; asked by analysts about the timing of his departure, he said he thought the merger process had progressed to a certain point and it was time to move on.

"As with any merger, there can be only one CEO. It was pretty obvious the CEO's slot would be taken by Mel," said Panero.

Panero had been president/CEO since 1998, when XM was called American Mobile Radio Corp.

— Leslie Stimson



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World Radio History

AES 123 Expands Broadcast Content

The Audio Engineering Society will hold a dedicated, four-day Broadcast Audio Conference at its fall show in New York this year.

The organization said it is ramping up broadcast-related events in response to demand by television and radio broadcasters. The 123rd annual AES will be held at the Jacob Javits Convention Center; Radio World will publish a more detailed preview in the Sept. 26 issue.

AES is calling its broadcast content a "conference within a convention." Convention Committee Chair Jim Anderson and Conference Chair David K. Bialik are organizing the program, which Bialik describes as a technical show designed specifically for audio engineers and production people, not a conference for sales or programming people.

Telecom and Internet

"We have facility design, audio processing, the latest innovations in digital radio. How to do sound effects! When was the last time anyone did a session on *that*? We have a session on loudness that's been a running discussion for several years; we're doing one on listener attention and fatigue," said Bialik.

Photo courtesy AES

Herb Squire of DSI, Bob Band of Harris and Rolf Taylor of Telos debate audio transport at AES last year.

He has been organizing broadcast events at the East Coast AES national shows since the late 1980s, and recently has worked on West Coast conventions as well. The show alternates coasts.

The engineers of WNYC(FM) will talk about its facility project, he said. "Steve Shultis and the WNYC crew are building a premier facility and trying to utilize all the current technologies to build a flagship public radio station in New York City."

Another session deals with working with telecom companies and features engineers from XM Radio and Global Digital Datacom Services Inc. "How to order the lines, what to order, how to troubleshoot the line — stuff that's basic, but a lot of newer people coming in don't know a lot about telecom. It's not just about getting a balanced circuit anymore," Bialik said.

Dan Braverman of Radio Systems will discuss radio facility projects in Africa and the developing world, where he has been active. Bialik also is enthused about a panel on Internet streaming, audio quality and monitoring, with participants from DaySequerra, Omnia, NTI Americas, Microsoft, Akamai and others.

"No computer show, no broadcast show that I've found has ever done a session on that topic," he said. "Some of the Internet audio sounds *crappy*! Now with the royalty fight and everything, you're going to separate the big boys from the small. How do you make your content sound good? I believe within two or three years, that's going to have to be a separate track of the convention."

Broadcast sessions also include "The Art of Sound Effects" with SFX/Foley artists and a representative of "Late Show With David Letterman"; a panel on "The Macy's Thanksgiving Day Parade: An Audio Primer," with technical experts from NBC including Senior Audio Mixer Ed Greene; "Considerations for Facility Design," moderated by RW's Paul McLane, with speakers from Walters-Storyk, Meridian Design, Studio Technology, Radio Systems, VCA and WireCad; and the "Loudness Workshop" moderated by Emil Torick and featuring representatives of Omnia, TC Electronic, Dolby Laboratories and Canada's Communications Research Centre.

Innovations

Bialik will moderate a panel on "Innovations in Digital Radio" featuring participants from NAB, DaySequerra, Neural Audio, NPR, Ibiquity Digital and CEA; Glynn Walden of CBS Radio will chair a discussion about audio processing for HD Radio including speakers from Aphex, Omnia, TransLanTech, TC Electronic and Dolby.

A discussion of facility wiring and distribution systems will include speakers from Aviom, Axia, CobraNet, Sierra Audio Systems and Radio Systems, while David Layer of NAB will chair a discussion about listener fatigue and retention and Skip Pizzi of RW and Microsoft will moderate a talk about audio playback and automation for radio. The latter group includes John Bisset of Broadcast Electronics, the author of RW's *Workbench* column.

"They asked me to put together three or four sessions and I came back with 19," Bialik said with a laugh. "There wasn't enough time — and no one wanted to go to a session after midnight."

The convention will be held Oct. 5–8. For information and registration visit *www.aes.org/events/123*.

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HD Radio News

Radiosophy's HD100 Radio

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Radio World | Covering Radio's Digital Transition | September 1, 2007

GUEST COMMENTARY

Conditional Access Is in the Public Interest

How Do We Explain the Dichotomy of Maintaining Free Radio Yet Enabling Conditional Access Over This Free Medium?

by Thomas E. Rucktenwald

Rucktenwald is director of data applications delivery with NDS, Costa Mesa, Calif.

There is an issue brewing in the radio industry and it revolves around nothing less than freedom, technology and the future of the medium.

Terrestrial radio has always been free for consumers. But with today's modern technology, it is now possible for consumers to receive higher-quality content targeted to their interests. Is providing these options to consumers the way to go, or should terrestrial radio continue as it is today?

NDS RadioGuard Protector

In his statement accompanying the March vote on IBOC rules, FCC Commissioner Michael Copps expresses dissent-in-part to HD Radio subscription services and raises issues about localism and diversity. There are others who believe conditional access is a back door to introducing subscription-based pay radio.

Conditional Access (CA) provides authorization or entitlement to individually addressable radios. On some systems, CA supports both paid-for subscription and free, opt-in services but it is also a proven method of producing high-value and high-quality content.

How do we explain the dichotomy of maintaining free radio yet enabling CA over this free medium?

The answer is that most digital terrestrial HD Radio broadcasts will still be free. The HD Radio CA solution creates additional opportunities for enhanced free digital terrestrial radio. In so doing, HD Radio signals still will not compete with subscription-based satellite audio services.

Conditionally accessed services provide public good offerings, promote community-building activities that incorporate localism and diversity, enforce general public protection while providing free speech, and supply creative entertainment and information opportunities.

In order to receive a free conditionally accessed service, consumers will only need to sign up for the broadcast and, in some cases, meet certain qualifications. The free service may be underwritten by advertiser support. Certain qualifications might mean that a listener receiving reading services for the blind is legally sight-impaired, or it might mean that the listener understands the nature of and can legally agree to receive the broadcasts.

Public service

Public "good" or service channels are available free of charge to a constituency but may not be available to the overall public.

For example, the International Association of Audio Information Services Radio Reading Service volunteers read books, newspapers and magazines for the legally blind. These publications hold a copyright, therefore reading them cannot be offered free to the general public.

With the new CA-protected transmission, a sight-impaired person can use an off-the-shelf, CA-equipped HD Radio to hear excellent-quality audio reading service. Additionally, listeners can receive other broadcast stations when they are not listening to the reading service.

The station or the reading service can individually address and turn on the programming while accounting for each listener and their receiver. The present reading service radios use an SCA channel and supply dreadful audio quality. Receivers can also be lost, broken or sold in garage sales, which adds to the difficulty of tracking the units.

Radio broadcasting has excellent statistical reliability during emergencies. Emergency providers, such as police, fire and paramedics, could use a one-way channel for service coordination during a crisis.

This public "good" broadcast would be available to the qualified emergency workers only; the police/fire/paramedics or the station would entitle off-the-shelf HD Radio receivers. When not in a crisis mode, these organizations might use such a channel for training and practice.

Public good service providers can help obtain broadcast and reception equipment through public funds, grants and donations. Their programming channels should consume a minimal amount of broadcast bit space. This means the subsidized equipment comes at the inexpensive cost of a narrow broadcast pipe.

Opt-in

An opt-in service is one where the general consumer chooses to receive a free-of-charge scrambled broadcast via HD Radio signals. The listener signs up and provides certain required information, including the radio serialization number.

The broadcaster confirms that the listener is qualified and may additionally obtain important consumer and demographic data. Advertisers will focus their promotions using the conglomerate listener information. The consumer and demographic information can be the basis for future ad substitution.

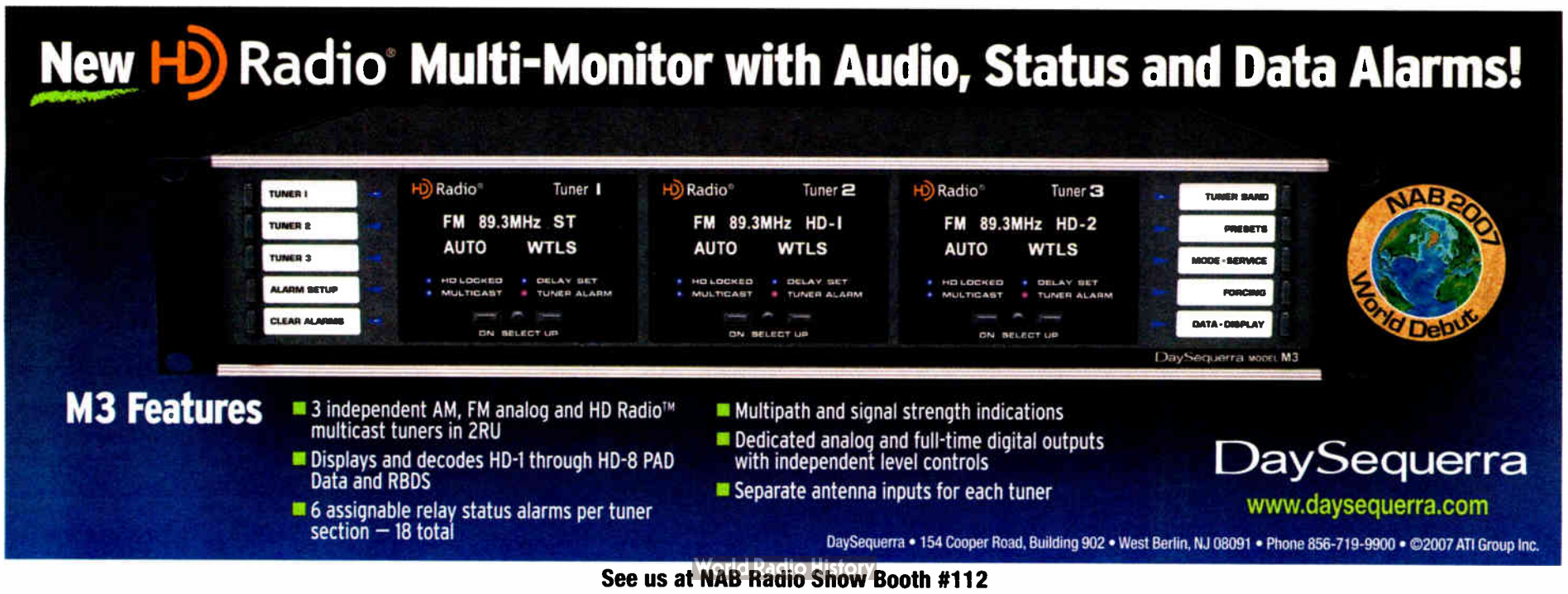
Some say that the Internet has become the place of discovery. The Internet, however, is more like an encyclopedia or a dictionary; it is great if you already know what you are looking for.

True discovery comes when you are presented something that you did not already know. This may be happening on MySpace, but it is happening merely one friend at a time. Radio is a broadcast media, reaching many with one, single transmission.

The consumer can rightfully expect something that imparts discovery, something that is stellar or compelling, on an opt-in channel. Things that are individually important captivate people.

Many things that are captivating are local. Localism is the strength of terrestrial digital broadcasting. Such opt-

See CA, page 22 ▶



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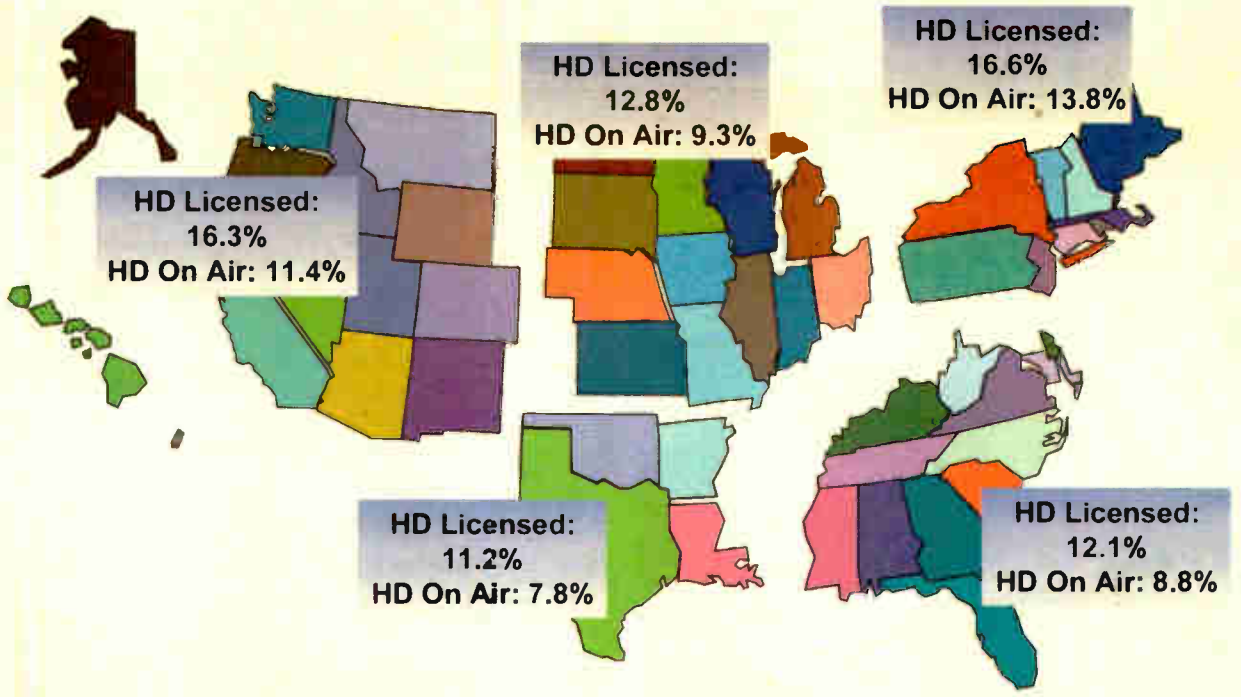
Radio World's HD Radio™ Scoreboard

The HD Radio Scoreboard is compiled by Radio World using information supplied by iBiquity Digital Corp., the HD Digital Radio Alliance, BIA Financial Network and other sources. Data reflect best information as of August. This page is sponsored by Broadcast Electronics. HD Radio is a trademark of iBiquity Digital Corp.

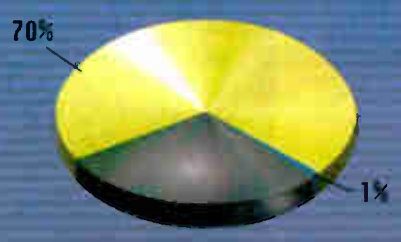
Percentages of Radio Stations by Region – HD Licensed and HD On Air



Source: Data above is from BIA Financial Network's data service MEDIA Access Pro ™ and also includes Ibiquity information. Visit www.bia.com

HD Radio at CBS Radio

Total stations: 140



The HD Radio Bottom Line

	Total Licensed	On the Air	FMs Multicasting
	1,900	1,384	666
Last Month:	1,859	1,349	661
Last Year:	1,469	917	294

World Radio History

PRODUCT REVIEW

Radiosophy HD100 Is Economical

HD100 Provides Tabletop Digital Radio Reception at the $100 Price Point

by Kevin Larke

Although the Radiosophy HD100 table radio originally listed for $119.99, it was sold at a special introductory price of $99.95 and will remain at that price, according to the company. The radio can only be purchased from Radiosophy.

Early buyers were able to get the HD100 for $59.99 after a $40 rebate from Ibiquity Digital Corp.

The carton contains the radio, power supply, AM loop antenna, FM antenna, user guide and "quick start" reference sheet.

The radio is in a glossy rounded black plastic case that reminds me of the Bakelite cases of vintage radios. It is approximately 12 inches wide, 6/1-2 inches high and 4 inches deep. The display and controls are in the center between two small speakers that are about 8 inches apart. There are 15 push-buttons, a rotary volume control and a 3.5 mm stereo headphone jack that can also serve as a line output.

The rear of the radio has a standard F connector for the FM antenna input; the telescopic rod antenna threads into this connector. There are two quick-connect push terminals for the external AM antenna.

The AM loop antenna is supplied with tinned wire leads. There is a 3.5 mm "Aux Input" jack for MP3 players or other line-level audio sources. The "wall wart" external power supply provides 5 volts and 10.5 volts DC through a 6-foot cable that connects with a sturdy-looking four-pin connector on the rear.

The radio has no provision for battery power and doesn't contain a battery for memory storage.

'Seek All'

When the radio is powered up, the display shows the time as 12:00 AM. The quick reference sheet is helpful when setting the clock, user preferences and station presets.

The radio can be set to "Seek All" for any station, analog or digital. You can also set it to "Seek HD" and it will only stop on signals where a digital signal is present. There are five preset buttons that allow you to store five AM and five FM stations.

The radio has a sleep timer that will allow you to listen for 1 to 120 minutes before it turns off. The alarm can be set to wake you up with the radio or a series of beeps. Pushing the snooze button when the alarm trips will give you a little more silence before the alarm trips again. The instructions don't specify the snooze time and I didn't test it.

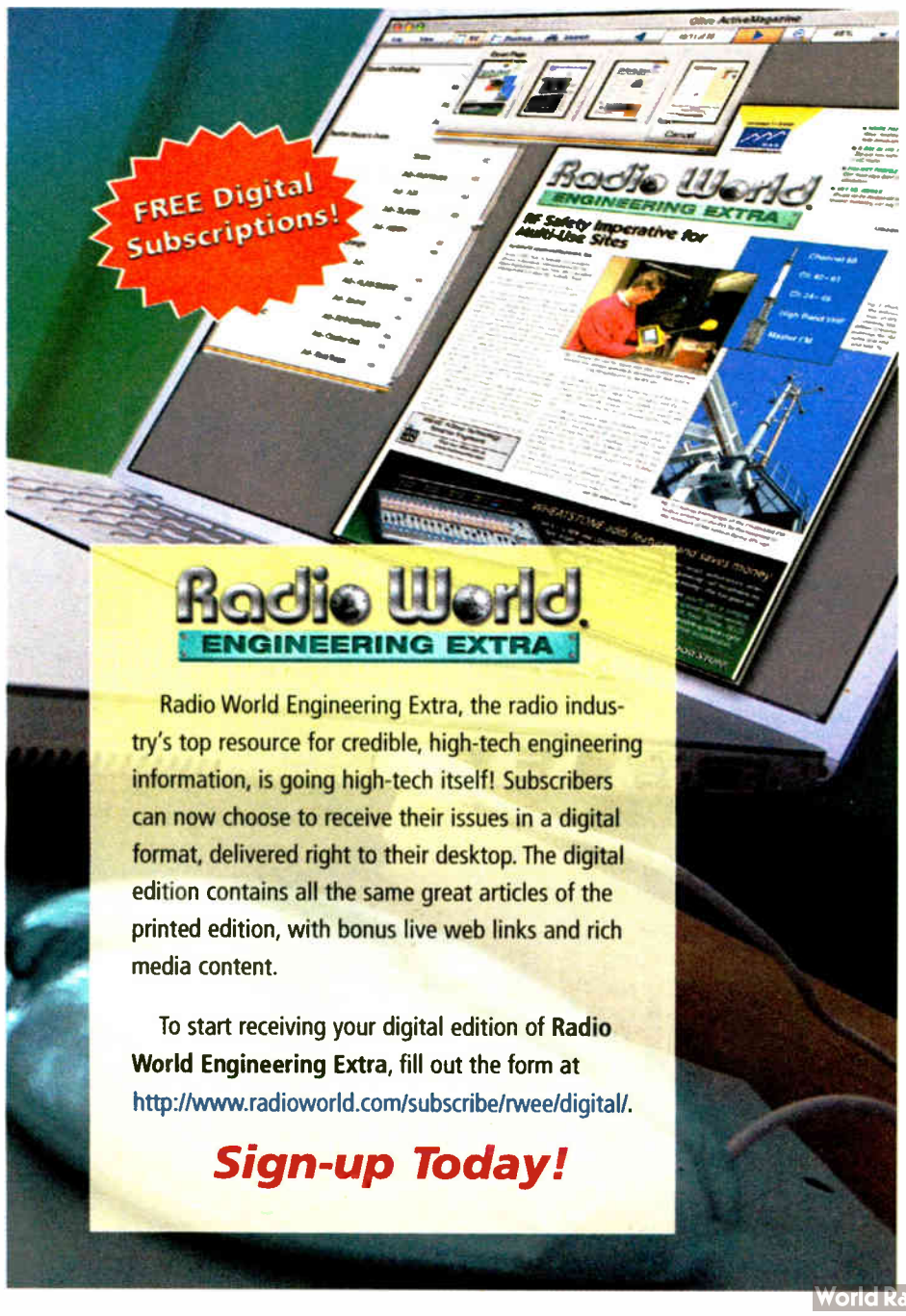
The blue backlit liquid crystal display has two lines of text. When receiving an analog signal, the upper line will show the station frequency. Although not mentioned in the instructions, the upper line also displays the text from analog FM stations with a 57 kHz RBDS subcarrier.

If the RBDS carrier is receivable, the frequency changes to the stations RBDS text. If the RBDS data is static, it will stay fixed. If a station is using dynamic RBDS, the display is a little slow to respond.

Two of our stations pulse out the eight-character PS catagory RBDS strings every 1.6 seconds. This is formatted for us by Google/dMarc and contains artist and song title text from our Scott Studios PC. The artist and title information is always followed by the station identifier strings. The LCD display takes about half a second to change, then displays the characters for about a second before the next change. This isn't a problem when receiving stations that transmit a fixed eight-character PS string. If a station broadcasts in HD-R and also has an analog RBDS carrier, you can't see the RBDS text on the HD100. The radio automatically changes to HD mode and defeats the RBDS display.

When receiving a digital station, the call letters are displayed on the upper line with "HD" before AM or FM. If an FM station is transmitting an HD2 stream, the display shows the call letters followed by a -1 or -2. When receiving an HD-R station with multiple programs, you just use the TUNE + and – buttons to select the HD1 or HD2 programs. At the time of testing, there were no HD3 streams

See RADIOSOPHY, page 24 ▶



CA

▶ Continued from page 20

in broadcasting will build community, like MySpace, but in a broadcast radio environment.

Each local community is unique. This offering is an opportunity for creativity, opportunity and diversity that provides for the local community and a profitable niche broadcast marketplace.

Sometimes opt-in programming will mean that the boundaries will stretch or some programming may be outrageous. While we have no ruling about whether such broadcasts might be acceptable, please note that the broadcaster, through CA, generates a lock on the channel.

Only those that want the programming and meet the qualifications, like being 21 years old or older, will receive it. Those that do not wish this entertainment will not hear this channel.

When do we begin?

NDS RadioGuard HD Radio Conditional Access broadcast equipment will be available soon from your favorite suppliers. Radio descrambler and security ICs will ship to receiver and module manufacturers in the beginning of September. The first HD Radios that receive conditionally accessed services can be in stores for the holidays.

It takes a small amount of time to proliferate through the delivery chain. However, radios will go to the markets that broadcast first. It takes time to convince radio makers to create their offering, but, just as in all other transmit-and-receive circumstances, the broadcaster's actions convince the consumer electronic manufacturers.

Recent product announcements are evidence to this success. Very soon, it will be difficult to find a radio that does not receive HD Radio broadcasts. Shortly, all radio decoder ICs will have HD Radio conditional access reception built-in.

The public interest

Will there be subscriptions? Yes, but they will most likely be data subscriptions, like navigation and traffic information or up-to-the-second stock quotations.

Will there be pay audio services? Yes, but these will be pay-per-listen, high-value, one-time events rather than ongoing audio subscriptions.

Are these choices within the public's best interest? Prominent people are asking this question. Services that provide consumer choice and simultaneously enhance the financial strength of our broadcasters tend to be in the best public interest. The vast majority of this new programming will be free to its listeners.

By nature of this technology and its deployment, HD Radio with NDS RadioGuard Conditional Access will protect the consuming public, stimulate new creativity and new programs, promote localism, enhance opportunity and diversity, and most of it will free. Aren't these choices squarely in the public's best interest?

RW welcomes other points of view. See related story, page 12.

Radio World's HD Radio Scoreboard is published in alternating issues. Selected data is from BIA*fn*'s MEDIA Access Pro™; the scoreboard also uses information supplied by sources including iBiquity Digital Corp., the HD Digital Radio Alliance and RW's own research.
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World Radio History

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World Radio History

Radiosophy

▶ Continued from page 22

available in the Detroit area but I assume the radio would step through those in the same way.

LED indicators

When receiving an HD signal, you can push the ENTER button to change the lower line on the display to five choices. It will step through frequency, time, artist, title and a signal-strength bar graph. The artist and title fields only work when stations are transmitting that information in the program-associated-data stream.

There are two LED indicators. A red one lights when an FM stereo signal is present. It stays lit when the radio locks on HD Radio. When tuned to an HD-R station, the blue "DIGITAL" LED flashes for about 5 seconds, then stays lit when it is locked.

On weaker signals, the light will begin flashing at times and the radio transitions back to analog receive mode. The radio doesn't give you the option to select analog- or digital-only receive mode; it's always automatic.

The FM performance is good with the supplied telescopic rod. The receiver will lock on HD-R signals that are solid in analog stereo. I connected an outdoor omnidirectional FM antenna with RG-6 coax and reception improved greatly, as would be expected.

The standard 75 ohm type F input for FM is a nice feature. When it transitions from analog FM to HD, the hiss and swishing in the noise floor go away and the signal-to-noise ratio improves dramatically. This is especially noticeable while listening with headphones.

The AM performance isn't quite as good as FM. The radio doesn't seem to have an internal ferrite AM antenna. You need to have an external AM antenna connected to the rear panel to receive anything.

The performance from the supplied loop antenna was disappointing. It only allows receiving strong local signals. Weaker analog stations sound noisier when compared to other small AM radios.

It seems to be more susceptible to interference from power lines and other sources of noise, like computers. The loop needs to be positioned perfectly to lock on AM HD stations, and the signal must be strong.

I connected my Terk "AM Advantage" tunable loop antenna and reception was much better. I was able to lock on two more AM stations in HD-R and analog stations had lower noise.

The transition from analog to digital is much more noticeable with AM. When it locks on HD-R, the noise floor drops greatly, the audio gets much brighter, and it's in stereo. I was able to listen to music on two AM stations in HD-R, 870 kHz WKAR and 910 kHz WFDF. Both stations sounded very good and the audio truly is close to the quality of analog FM.

Ibiquity codec less 'swishy'

The Ibiquity AM codec sounds amazingly good considering the bit rate is only 32 kilobits per second. Many Internet radio streams use this bit rate, but Ibiquity's codec sounds better with less of the "swishy" high frequencies in the audio.

The standard 75 ohm type F input for FM is a nice feature.

I used a 3.5 mm stereo cable to connect my Sansa MP3 player to the rear "Aux Input" and playback was fine. The audio level was about equal to the radio. The audio quality is what you would expect from a pair of small speakers.

It sounds good, but you won't hear thundering bass or sizzling highs. It's fine for average listening. A two-way speaker system with larger woofers and tweeters would be a nice improvement, but would have surely increased the cost and size of the radio. The radio doesn't have any tone or EQ controls for the audio.

The volume control is rather unusual, you can turn it all the way up without audible clipping distortion from the speakers or headphone jack. Plugging in headphones will mute the speakers. The level from the headphone jack is high enough for all but the most inefficient headphones. With a pair of Sennheiser HD202 headphones, the level gets uncomfortably loud with the volume fully clockwise, but still without clipping distortion. The earliest HD100 radios sold had a lower headphone output level, according to the manufacturer.

I measured the peak-to-peak voltage from the headphone jack with an oscilloscope. It's about 0.5 volt p-p maximum with a 10k ohm load. This is a standard –10 dBV consumer line level. The volume can be left at maximum if you're using the headphone jack as a line-level output, I couldn't see or hear clipping distortion.

When listening to an analog AM or FM station, the audio is still delayed a small fraction of a second. This is only noticeable if you have another analog radio playing the same station near the HD100. I suspect the delay may be caused by the receiver digitizing the analog signal.

The transitions from analog to digital and vice versa were mostly perfect. HD Radio stations are doing a much better job setting the analog delay now.

I drove from Lansing to the suburbs north of Detroit to try the radio in a market with many more HD-R signals to sample. It was interesting seeing how much variation there is in implementing IBOC. Some FM stations sounded noticeably brighter and better in HD-R. Other FM stations sounded almost identical when comparing their analog audio to HD-R. I suspect they are using the same audio processor for analog and digital.

Who is IDing their HD-R?

The AM stations sound dramatically brighter in digital, but most carry talk programming so the stereo separation isn't very useful.

The way stations use PAD text varied widely: 95.5 kHz WKQI, 98.7 kHz WVMV, 99.5 kHz WYCD and 104.3 kHz WOMC were impressive with their artist and title fields working on both the HD1 and HD2 streams.

WNIC 100.3 kHz had its artist and title PAD working, but didn't have HD2 programming. WDRQ 93.1 kHz had artist and title on HD1, with blank fields on the HD2 stream that airs WJR's audio. WMXD 92.3 kHz, WJLB 97.9 kHz and WDMK 105.9 kHz didn't have artist and title info working or HD2 programming.

Product Capsule:
Radiosophy LLC
HD100 HD Radio Receiver

Thumbs Up

- ✓ Low cost and small size
- ✓ Very good FM sensitivity & selectivity
- ✓ Standard type "F" FM antenna input
- ✓ Handy auxiliary audio input jack
- ✓ 3.5 mm stereo headphone jack can be used as "line output"

Thumbs Down

- ✓ Disappointing AM reception with supplied loop antenna
- ✓ Needs 120 VAC, won't operate on batteries

PRICE: $99.95, available only from Radiosophy

Info: (877) 443-7234 or www.radiosophy.com

WCSX 94.7 kHz only had "94.7 WCSX" and "The Classic Rock Station" in the artist and title fields. The artist and title text would be a nice addition on the WCSX "Deep Cuts" HD2 stream, but the unused fields came up blank on the HD100.

WRIF 101.1 kHz had the artist and title fields frozen on "Creed — My Sacrifice Album Version" and the HD2 stream only displayed "RIFF2 — Made in Detroit." WMGC 105.1 kHz had the artist and title fields frozen on "Irene Cara — What a Feeling" and the HD2 stream only displayed "More Magic — WMGC Magic 105.1." The station obviously was experiencing some kind of digital glitch with the stuck text fields.

The HD100 would be a good receiver for someone who wants to check out HD Radio for around $100. You can patch it into an audio system with bigger speakers set farther apart if you want to impress people.

Plan on finding a better AM antenna if you are serious about AM HD-R reception. The manual could use a rewrite, but the technically savvy types will figure out how the buttons need to be pushed.

The author is chief engineer of Mid Michigan Radio Group in Lansing.

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Radio World — Resource for Radio On-Air, Production and Recording — September 1, 2007

PRODUCT EVALUATION

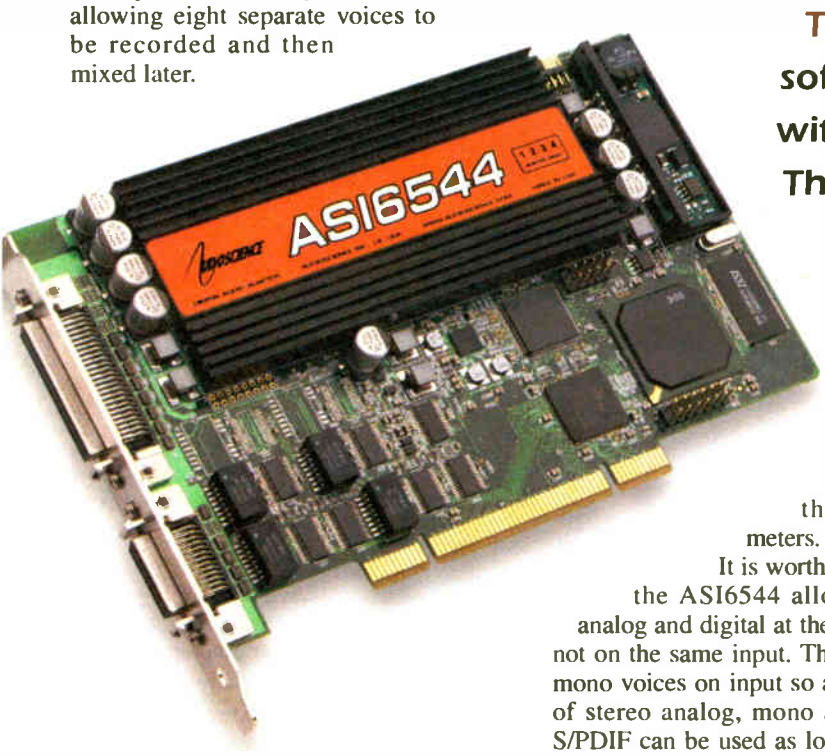
A Review by Two: Testing the ASI6544

Clear Channel Engineers — One IT, One Studio — Laud Sound Card's Driver Support, Software

by Andy Mika and Colin Campbell

Andy: The ASI6544 multistream PCI sound card from AudioScience fills a void in the market between large multitrack recording interfaces and two-channel stereo cards found in many production rooms.

Allowing for eight simultaneous mono inputs, the 6544 could pair up perfectly with an eight-bus console in a "live room," allowing some flexibility during post. For example, the 6544 would shine on a pre-recorded panel discussion, allowing eight separate voices to be recorded and then mixed later.



The card itself is easy to install and the audio cables are labeled well. I personally would prefer a breakout box to the cable-based breakouts supplied for testing, but this is aesthetics (the company says it does provide one); the cables all worked flawlessly.

The audio quality of this card is what you would expect from AudioScience, definitely in the upper echelon of converters. The ASI Mixer and routing software give great metering with peak and RMS readouts. The software gives clear and concise control over the card's parameters.

It is worth mentioning that the ASI6544 allows you to run analog and digital at the same time, just not on the same input. The card has eight mono voices on input so any combination of stereo analog, mono analog, AES or S/PDIF can be used as long as only eight of the card's voice paths are used.

Note: You can digitally mix streams of different sample rates and formats, thanks to the on-board MRX multi-rate mixing technology. AES/EBU inputs have sample rate converters too. On output, it can provide 12 playback channels that are essentially routed to any of the four stereo outputs in any combination.

Ready to play

With this amount of ins and outs, this card is well suited out of the box to play in the broadcast automation world. There are WDM, WAV, Vista and Linux drivers supplied for all 6000 series cards, making it compatible with many software applications. As always, check with your particular supplier on compatibility before purchasing.

In addition to the aforementioned drivers, this card has ASIO (Audio Stream In/Out) support, making it a great compliment to many of the new multi-track software suites such as Adobe Audition 2.0, Steinberg Cubase and many other multi-track applications. Note that the 6544 is not OSX-compatible, nor is it supported by Digidesign's ProTools.

The ASI Mixer and routing software give great metering with peak and RMS readouts. The software gives clear and concise control over the card's parameters.

— Andy Mika

Product Capsule:

AudioScience ASI6544 Multistream PCI Sound Card

Thumbs Up

- ✓ Great sound quality
- ✓ Plenty of ins and outs
- ✓ Superb metering in the driver
- ✓ Flexible routing software
- ✓ Multi-rate mixing technology
- ✓ TSX time scaling
- ✓ PCI Express version available

Thumbs Down

- ✓ Cannot run A/D simultaneously on the same input
- ✓ Lots of XLRs hanging off cables

PRICE: $3,495

CONTACT: *AudioScience in Delaware at (302) 324-5333 or www.audioscience.com.*

From an emerging applications aspect, the true calling of the 6544 is surround sound. Mixing in 5.1 surround requires six independent mono audio channels for left, right, center, rear left, rear right and the LFE channel. The 6544 shines in this realm, boasting enough channels for the surround mix with its SSX2 mode and also giving the extra two channels for a supplementary stereo mix.

To sum it up, the ASI6544 is a first-class audio card. The driver support and ASI software is great. The lack of Apple OSX drivers isn't too disappointing, as most of the big OSX players (ProTools. Digital Performer, Logic) are using proprietary interfaces. It is refreshing in these days of USB 2.0 and FireWire to see companies like AudioScience still releasing quality PCI-based audio cards.

Second set of eyes

Colin: The ASI6544 went into an available PCI slot in a new run-of-the-

See ASI6544, page 28 ▶

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"Nobody ever said anything nice about my voice until I started using this (PR 40)."
-Leo Laporte, KFI, The Tech Guy

I just put in some of the Heil PR 40's replacing Neumann's and I have to tell you man, that's the best sounding microphone I have ever heard for broadcast. Sure made a believer out of me.

Jay Rose KVEG, Las Vegas

"The Heil PR 30 presents the smoothest and most articulate speech audio from any dynamic microphone I have ever used. Congratulations to the Heil team for bringing large diaphragm dynamics to the marketplace."
-Mike Dorrough, company founder and Pres dent,
Dorrough Electronics

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World Radio History

PRODUCT EVALUATION

ZFR800: A Recorder That Thinks It's a Mic

Zaxcom's Wire-Free Handheld Records Time-Stamped Audio to Removable Cards For Voice Recording on the Go

by Gary Eskow

Bit by bit, literally and figuratively, the audio community is bidding adieu to analog recording — or at least placing it in an enclosed area, to be visited only when a saturated sound is desired.

Among the many benefits digital technology has to offer is the tiny size requirements necessary to record and store pristine audio. Zaxcom, innovators in the audio field recording industry for the last decade or so, recently released the ZFR800 handheld digital recording microphone. It looks like a simple, wire-free microphone, but don't be fooled.

In fact, the lightweight aluminum ZFR800 is both a microphone and recording device, like something you might have seen on "Get Smart," or another spy farce from the 1960s. It records eight hours of uncompressed audio at 48 kHz/24 bits in .ZAX file format to a removable 2 GB MiniSD (SanDisk or Transcend) card. Audio is transferred via the MiniSD cards only. There is no main audio connector. Frequency response is 16 kHz.

Zaxcom's Web site calls the recorder "a system optimized for use in radio interviews, broadcast journalism, podcasting and any voice-recording application that requires mobility and superior sound quality.

The company smartly has chosen to avoid entering the mic head market; the user chooses a Shure head or one that is compatible with Shure, and screws it to the body of the device.

The ZFR800 is efficient. Zaxcom says a single lithium battery will power it for up to 10 hours, and I was able to put a ZFR800 through the paces over several days without having to grab a second one. Of course, out in the field, where failure is unacceptable, you're likely to be cautious and replace batteries frequently.

Inside, outside

To turn on the unit, slide open the battery enclosure and flip a (very!) small switch. Once engaged you can begin to familiarize yourself with the four buttons and LED screen that characterize the ZFR800 as a recorder.

On the left is the Record button. Engaging it instantly puts the unit into record mode. As a safety, the device emits a single beep tone through the headphone monitor jack located on the bottom of the ZFR800. Two beeps indicate that you've stopped recording; however, the display keeps a running display of the internally generated time code data so this is hardly mandatory. You also can drop markers into your audio file during recording by holding the Record button for a second or so.

Keep in mind that in a typical situation — your reporter arrives on the scene of a breaking fire, for example — the talent is the person who will be operating the ZFR800. If John Smith is incapable of handling even the most rudimentary technical assignments — making sure a device is turned on, for example, and that the high-pass filter hasn't been accidentally engaged — you might think twice about placing a ZFR800 in his hands. However, this is really just a cautionary note. No one over the age of 12 or so should have any problems operating this unit.

The Menu button, located to the immediate right of the Record button, lets you customize the ZFR800's performance. The gain can be increased up to 38 dB (in two dB increments) by pressing the up arrow on the far right of the device. A high-pass, variable-frequency filter can be engaged in similar fashion. Ditto for the device's limiter.

Popular time code formats are displayed in the Menu and can be selected by the user from this list. Time code options are less of interest in radio work. Potential buyers might want to keep in mind the fact that they'll be paying for a feature they're not likely to use.

Also, choose to erase and reformat the

See ZAXCOM, page 29 ▶

Product Capsule:
Zaxcom ZFR800 Handheld Digital Recording Microphone

Thumbs Up

- ✓ Good battery life
- ✓ LED screen
- ✓ Choose your own mic head — as long as it's Shure or Shure-compatible
- ✓ Two record modes
- ✓ User-friendly
- ✓ Easily rewrite audio files with ZaxConvert

Thumbs Down

- ✓ Lowest sample rate is 32 kHz
- ✓ MP3s can't be saved at depths lower than 16 bits

PRICE: $1,295 list

CONTACT: *Zaxcom in New Jersey at (973) 835-5000 or visit* www.zaxcom.com

ASI6544

▶ Continued from page 26

mill standard-issue HP dc7700. The machine has a 3.4 GHz processor, 1 GB of RAM and a 160 GB hard drive, and is running on Microsoft XP-Pro SP2 O.S. No driver was provided in the box but a quick visit to the ASI Website remedied the situation.

I chose the WDM driver for XP, which has ASIO support. It installed flawlessly. XP detected the card and we were off. For testing purposes we chose Adobe Audition 1.5, commonly used at radio plants.

All manner of cable-based breakouts were provided to connect the card to the outside world. We found the large amount of XLRs hanging off these cables to be a bit unwieldy. There is, however, a rack-mount solution available from ASI.

The unit has four stereo analog inputs and outputs that can be split out to eight and eight mono if desired. Also provided are four stereo digital ins and outs that can be used as S/PDIF or AES/EBU switchable in the card's software.

We found the metering in the driver to be superb, showing both RMS and peak values with nice ballistics. The software allowed for just about any conceivable routing of the unit's I/O. However, we noticed fairly quickly you cannot use all four analog and all four digital inputs simultaneously.

You can mix and match digital and analog but you only have four stereo/eight mono "ins," no matter how you slice it. It would have been nice to see a separation of the card's capability to allow four stereo analog and four stereo digital inputs at the same time. We discovered this in Adobe Audition, whereas we have seen with other cards the ability to select either the digital or analog in. But in this case you were selecting more of a "channel" that is analog or digital, but not both.

Sound quality was excellent. I'm sure it meets its published specs (110 dB SNR, 24 bit ADC/DAC).

A unique feature of this card is its ability to encode and decode MPEG Layer 2 and MP3 audio directly (native) on the card, utilizing a floating-point DSP. AudioScience states this offloads the PC's resources for better performance. We felt there may also be a quality improvement encoding audio before it ever hits the application software.

Another impressive feature set is the TSX time scaling, which allows compression/expansion of play streams by up to +/-20 percent with no pitch shift.

Adobe Audition had no problem detecting and using all of the cards I/O.

We did feel that the ASI6544 was a card in search of a market. With only four stereo inputs and outputs, it is too much for the mixer-outfitted studio, but not enough for the full-blown computer-based production suite.

Andy Mika is a broadcast engineer for Clear Channel Columbus; Colin Campbell is the director of IT.

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World Radio History

Zaxcom

▶ Continued from page 28

memory card (128 MB-2 GB) from this Menu, and lock out the device to prevent further recording.

Two record modes are available. Conventional mode is just that; audio is continuosly recorded until available space has run out on your recording media, at which point you can erase the MiniSD card or simply insert another one. Loop mode erases recorded data once a card is full and commences another record cycle.

Recording session

The ZFR800 records to its own proprietary format at a single audio setting: 24-bit, 48 kHz. The company touts an "infinite" prerecord buffer so you can backtrack in case you forget to press Record. Using ZaxConvert, a tiny application that can be downloaded from the company's Web site, the user easily can rewrite audio files from the .ZAX format to which the ZFR800 tracks, into WAV files (at variable bit and sampling rates) and MP3s. Once loaded onto your computer (Windows or Mac), using a USB card reader, files are selected using ZaxConvert. A destination folder you create is chosen as the output.

While a number of variables can be chosen, there are some limitations. For example, the lowest available sample rate is 32 kHz (many conversion programs allow you to step down further), and

The ZFR800 is like something you might have seen on 'Get Smart' or another spy farce from the 1960s.

MP3s can't be saved at any depth lower than 16 bits. I'm not sure why Zaxcom chose to impose these limitations on the user, but in most cases they won't present a serious problem in audio post work.

Speaking of MP3 conversion, Zaxcom is not allowed to bundle the LAME library file that this function requires in its package for legal reasons. A text file, included in the ZaxConvert download, gives the user a link to this file.

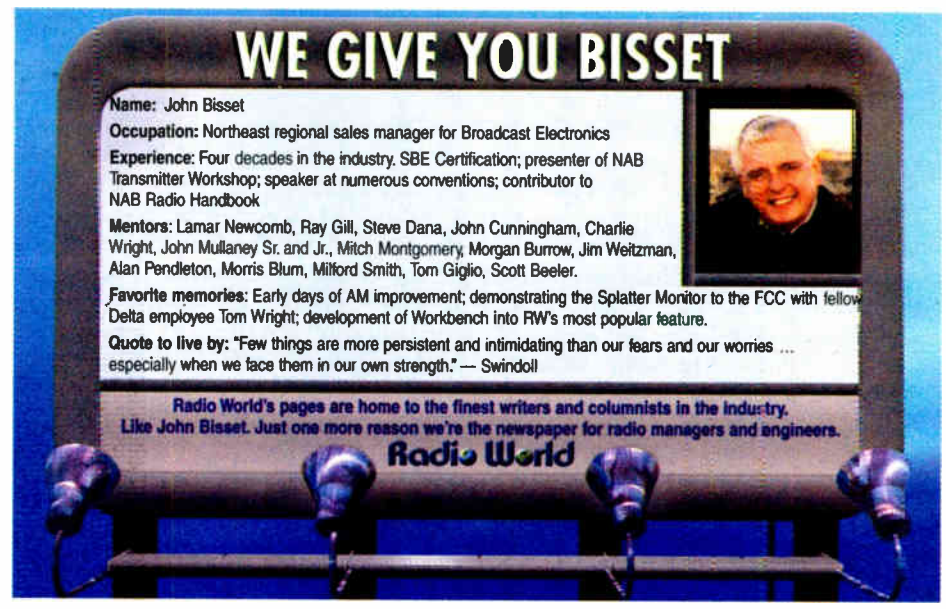
Competitive nature

The ZFR800 has a lot going for it. For starters, the recording is in line with the outstanding audio quality characteristic of Zaxcom products. Using the Shure BETA 58A with which the demo unit shipped, I recorded clips with and without engaging the limiter and high-pass filter, and the output — at a straight 24-bit/48 kHz transfer rate and with stepdowns to 16 bit and MP3 files — was excellent.

Given that HHB was prominently first to market with a product in this Flash mic/recorder niche, it seems fitting to briefly compare the two. The HHB DRM85 FlashMic and the more recent cardioid version offer 1 GB Flash memory for digital audio data; a maximum record time of about 18 hours; LCD display; headphone amp with volume control; and a USB-Interface for transfer of audio data. But it does not offer removable cards for field use, a feature that sets the ZFR800 apart from the DRM85. The FlashMics record linear 32, 44.1 or 48 kHz, or MPEG 1 Layer 2 encoded audio (128–192 kbps) broadcast WAV files including time stamp. Both versions of the FlashMic retail for $1,049.

With a list price of $1,295, the ZFR800 is one of the higher-priced spreads. Those who may be considering the usefulness of a hybrid of this nature and are impelled to own quality gear, however, will find the ZFR800 intriguing. A microphone that can record and time-stamp its own audio files is a timely development.

Gary Eskow is a composer and journalist. Visit www.garyeskow.com.



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World Radio History

PRODUCT GUIDE

IsoPacs Separate, Absorb Studio Sounds

Acoustical Solutions offers five Isolation Packages with a choice of light gray and dark gray Sorber panel baffles to control the reflected sound. The IsoPac booths are portable and easy to get in and out of, according to the company.

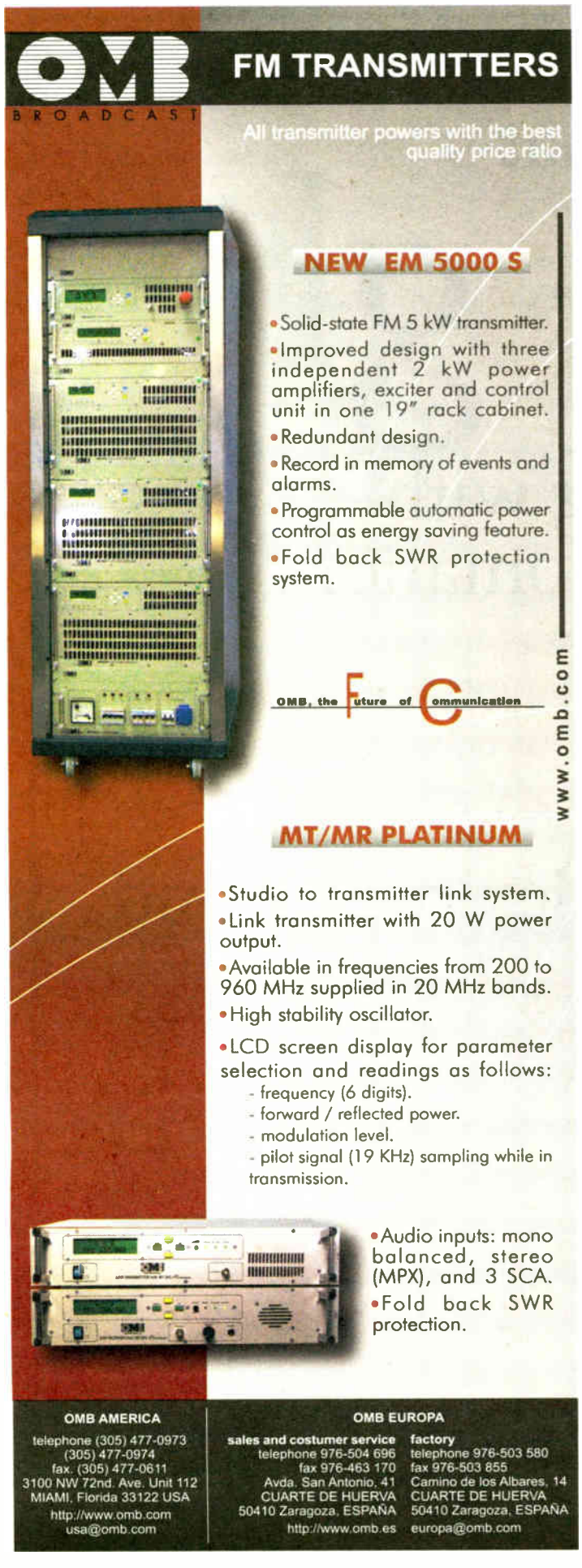
IsoPacs A and B, along with the MegaPac, feature the ClearSonic Lid System, which helps reduce the amount of sound that would normally escape upwards. The Lid is helpful in rooms with high, hard ceilings. IsoPacs C and D are for applications where the lid, or roof, is not necessary.

IsoPacs E, F and G are enclosed vocal or voiceover booths that also can function as instrument isolation booths. They are offered in 4, 5 and 6 foot diameters.

ClearSonic Panels wrap around the front of the IsoPacs. These provide acoustic separation between instruments in the studio; help reduce drum bleed into vocal or instrument microphones; and lower stage volume. Panels are made from a 1/4-inch-thick clear acrylic, with cable cutouts between panels as standard. The transparent hinge allows the system to fold "accordion style" to ease transport and storage.

ClearSonic Sorber Panels contain sound and control reflection. Sorber panels are manufactured out of 1.5-inch compressed fiberglass and encased in "truck cloth." The company says Sorber panels improve the performance of the ClearSonic Panels by soaking up reflected and direct sound, which if not absorbed, could cause the drum kit to sound more "roomy" than desired.

For more information, including pricing, contact Acoustical Solutions at (800) 782-5742 or visit www.acousticalsolutions.com.



AKG Elle C Designed For the Female Voice

Here's one for the ladies. AKG's Elle C live performance vocal mic is optimized for the acoustic and ergonomic requirements of the female vocalist.

The company says the Elle C condenser microphone delivers an accurate detailed and natural sound. It features an XLR connector module with 24-carat gold plated pins to optimize connectivity, as well as resistance to corrosion and humidity. Additionally, the mic features a spring steel wire-mesh grille, offering control of pops and wind noise.

When researching the female vocalist marketplace, AKG addressed how women viewed the current live performance microphone offerings and inquired about the acoustic performance of their current microphone choice. Asking questions to get an accurate picture of acoustic and aesthetic likes and dislikes about each of the models currently available, AKG says it compiled reliable data about what is important to the female performer and how to address her specific live performance needs.

The Elle C features a frequency range of 60 to 20,000 Hz. The lightweight unit is available in high-gloss metallic or white pearlescent finish.

For more information, contact AKG in California at (818) 920-3212 or visit www.akgusa.com.

UniqueTracks Has Effects For Broadcast, Webcast

UniqueTracks offers royalty-free music soundtracks and sound effects. It has released its High-Impact Sound FX series. The collection's 1,350 effects are organized into four volumes.

Volume 1, High-Impact Radio, contains 365 sound effects for promos, sweepers and station IDs, including telephone effects, sound beds, tape rewinds, transmissions, numerous whooshes, lasers, ramps and accents.

High-Impact Sound FX Series

Volume 3, High-Impact Multimedia, is for Web creators looking for sounds to link with button and mouse behaviors, error messages, start-up screens and pop-up elements. The collection features 450 audio effects including clicks, beeps, pings, chimes, gears and musical tones.

Volume 2 has audio elements to underscore visual storytelling, and Volume 4 has sound effects for games.

Each of the sound files can be purchased individually and immediately downloaded as 16-bit, 44.1 kHz stereo WAV format files from the UniqueTracks Web site. The entire collection also can be downloaded or the series can be shipped on four CD-ROMs. The 1,350 sounds can be previewed in Flash or QuickTime at *www.uniquetracks.com/Sound_FX_Series.html.*

For more information, contact UniqueTracks at (888) 400-2149 or visit www.uniquetracks.com.

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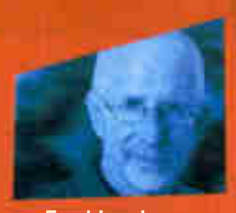
Vice President of Global Media & Sports Marketing, Anheuser Busch & President/CEO, Busch Media Group

Frances Allen
Brand Marketing Officer, Dunkin' Donuts

David Verklin
CEO, Carat Americas



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USER REPORT

Saga Asheville Thinks Outside the 'U'

It Picks Balsys Furniture for Six New Studios, Citing Accessibility, Functionality and Modern Look

by Steve Marcus
Operations Manager
Saga Communications of North Carolina

ASHEVILLE, N.C. Saga Communications recently built all-new facilities for its Asheville market cluster including WOXL(FM), WISE(AM)/WYSE(AM) and WTMT(FM). Relocating from old and worn facilities that had been expanded and remodeled several times over many years was both an exciting and daunting venture. Issues to be addressed included the layout, functionality and look of the six new studios.

We had originally planned on installation of basic, off-the-shelf "U" furniture configurations, but then decided to bring in **Balsys Wood Arts** to evaluate our requirements and quote custom furniture as an option.

Improve upon the original

When Balsys arrived on-site the walls were already framed, and doorways and windows were defined. Its job was to design a layout that provided maximum functionality and flexibility for present needs and future expansion possibilities within our predetermined budget and site restraints.

Balsys measured the rooms, assessed our operational requirements including a number of "wouldn't it be nice if" requests, gauged the sightlines and workflow dictated by the formats, and came up with designs that were an obvious improvement over our original ideas.

The custom furniture provided has a modern look and feel. All exposed wood is natural maple, and we opted for T-molding edges to reduce the cost a bit. Balsys designs emphasize large, open tabletop areas to accommodate the ever-increasing number of video monitors required to produce radio, while maintaining unrestricted visual contact between show participants and minimizing any acoustical obstructions.

One of Saga Asheville's New Studios

Each studio has ample workspace for talent and a number of guests. Pullout keyboard trays are provided where required, and pop-up dataports are installed in the tops to provide power and connectivity for the laptop PCs often brought by guests. These stow flush to the tabletop when not in use. Balsys provided maple ends for our Axia consoles, one of the little extra touches that make these studios so elegant.

Most satisfying to our engineers are the rack and wiring areas, offering ease of accessibility for installation and future maintenance. Slide-out and pivot racks are installed where no rear or side access is possible, and areas are well ventilated to prevent heat build-up, which can cause equipment problems. There are even recessed rack areas where CAT-6 patch panels connecting to our technical wiring are behind restricted access doors — keeping unauthorized hands away — and areas reserved for a central ground bus.

Legs are heavy, thick-walled steel that will survive abusive treatment by guests and talent. The "soft" finish used on the wood surfaces will not scratch and mar like the "hard" finishes used by most manufacturers, and is easy to restore if and when damage is encountered.

Facility image and efficient workspaces bring out the best in talent, and we have certainly accomplished that goal. The look even matches our office spaces, as the maple and exposed-leg theme were carried throughout.

Asheville may be market No. 159, but the new studios are comparable to major-market facilities in image and amenities, and something we can show off with pride.

For more information, contact Balsys Wood Arts in Florida at (407) 654-7611 or visit www.balsys.com.

Balsys provided maple ends for the Axia consoles — 'one of the little extra touches that make these studios so elegant,' said Marcus.

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World Radio History

OMNIRAX

BROADCAST FURNITURE

WHAT'S NEW:

We are currently in the midst of designing and producing furniture for two major projects in New York City, in which each room has furniture individually designed to fit each project's specific requirements and the intricate layout of each new facility.

1. WNYC: 32 rooms consisting of 6 On-Air Studios, supported by 6 Air Control rooms, 10 Production Control rooms, 5 News Production rooms, 5 Production Studios, 9 Booths and a News Hub.
2. Clear Channel (5 stations under one roof): 30 rooms consisting of 10 On-Air Studios supported by 10 Production, 3 Voice Tracking, 3 Imaging and 3 Commercial Production rooms, plus 1 room devoted solely to Creative Services.

We are proud and delighted to announce that the unique & signature design concept of our Innova Line of Broadcast Furniture is now available with the elegance, high-end appeal and durability of Corian solid surface.

Corian™ solid surface at Omnirax booth NAB 2007

What differentiates Omnirax from other furniture manufacturers is our uniquely balanced blend of style, functionality and ergonomics, our excellent collaborative custom design ability and our fanatical attention to detail.

Omnirax has been making bold statements in Broadcast Furniture for the past several years. We have experienced a meteoric rise from a virtual unknown in the Radio industry to the "Engineer's Choice" in just a few short years with the introduction of the Innova Line. A heartfelt thanks to all our customers!

The essence of the Innova Line lies in combining modular components with custom tailored shapes to fit particular requirements of On-Air, Production and Imaging Studios. Cable raceways are integrated into the structural design to facilitate wiring and create logical access points throughout. Conventional casework and cabinetry is produced so that an entire facility has a unified look and feel.

Omnirax works directly with Chief Engineers, Program Directors, Architects and Station Owners to provide intuitive and custom solutions at near-production prices.

When you begin planning your next project please call us and let us help you get the furniture you want.
We can make this part of the project go smoothly, and the sconer we are involved the easier this becomes.

"The Omnirax design makes these studios incredible for talent and operators on both sides of the console."

"Our furniture from you not only fit into our budget and timeline, it was very well constructed and looked beautiful. I expect to be outfitting many more facilities with Omnirax."

"I was impressed with the exceptional care given packaging for shipment. A few very large and potentially fragile components made it cross-country completely unscathed."

"The shipment came with plenty of documentation, plus actual pictures taken as it was assembled at their factory. They even supplied rack screws, tools, and everything needed to put the furniture together. The furniture is strong, well built, and they did a fantastic job. We look forward to using Omnirax again."

"I appreciate all the work you did, the studio looks FANTASTIC! The furniture went together very easily and looks awesome."

Omnirax P O Box 1792 Sausalito, CA 94966

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World Radio History

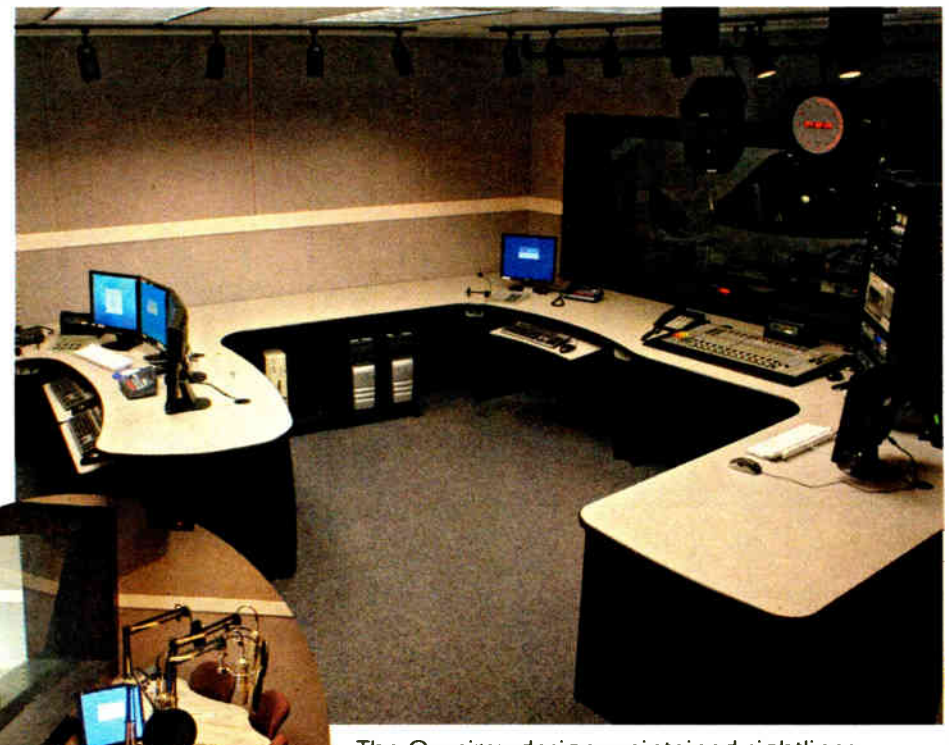
USER REPORT

Omnirax Furniture Is in 'Focus'

by Richard Reich
Senior Broadcast Engineer
Focus on the Family

COLORADO SPRINGS, Colo. Due to problems we had with a previous company, we began a search for a new furniture provider when the Control Room D project began. I contacted many companies and found that most did not return my calls or were not able to do what we wanted for our project. **Omnirax** responded with a solution that covered our requirements at a price we could afford.

With the timeframe we had and the unique things we needed, I found the designer had some great ideas to achieve what we wanted. We wanted to move the board operator position forward, making better use of the space.



The Omnirax design maintained sightlines between the call screener and other positions.

In control

Doing this placed the board op right on top of our cable pit, which is in concrete. We still needed access to the pit but needed to keep the position the same. Working with Omnirax, we designed a false leg that allows the cables to come up inside, and serves as a support leg for the countertop.

Control Room D performs many functions for various programs that are either recorded or live, and has a unique layout with a board op and producer position in front and a screener position in the back of the room. The screener position is mainly used for our "Sharing Life Together" program, a four-hour syndicated nightly call-in music talk show, now airing nationwide.

The screener determines whether callers need counseling or prayer or should speak with the host Martha Hadley, who resides near Seattle, via ISDN. The screener uses a Comrex STAC unit, and has four flat screens to access everything needed to perform their task as well as the Klotz controller module that is used in conjunction with the Klotz 12-fader D.C. II console. Omnirax had no problem accommodating this, as well as providing a comfortable spacing for the screener and the other positions.

Little extras

Another item added was a covered easy-access panel for punch blocks and IT equipment with cable tray access to all areas. We had many challenges, like keeping sightlines, the cable pit and a 107 degree angled wall between studio and control room. It became critical with all countertops butting up against walls and revealing any errors.

The shipping was well wrapped, and even though the shipper mistakenly cut the cords that supported the counter tops in the truck, allowing them to fall, only one was damaged. I called Omnirax and a replacement was manufactured, shipped and received at our facility, with the new section fitting perfectly. The shipment came with plenty of documentation, plus actual pictures taken as it was assembled at Omnirax's factory. It even supplied rack screws, tools and everything needed to put the furniture together. This furniture is strong and well built.

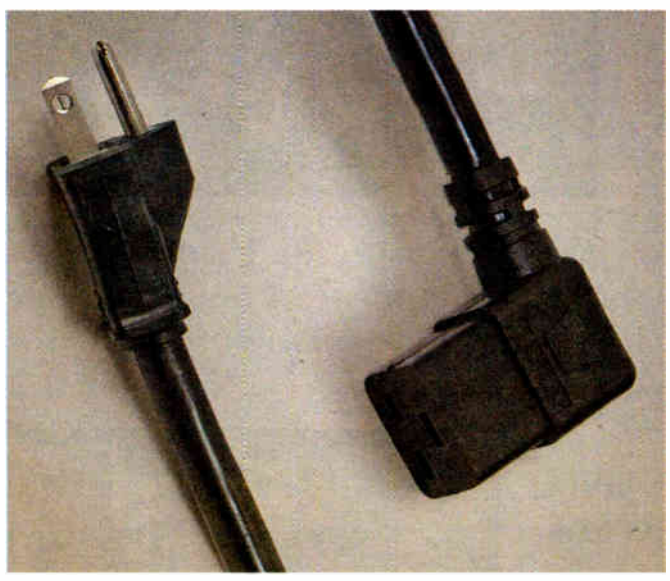
For more information, including pricing, contact Omnirax in California at (800) 332-3393 or visit www.omnirax.com.

TECH UPDATES

IEC Cords: Proper Prong Configuration

Stantron Racks, a division of **APWMayville**, made available its IEC power cords for its range of Stantron custom rack products.

The cords are available with racks including the E Rack for broadcast facilities and the Presentation Rack for A/V facilities, and a range of accessories for power, lighting and cooling.



The company says the IEC power cords are standardized to provide the proper prong configuration for both U.S. and international voltages and amperages. The cords do not allow the drawing of more current than the corresponding wall outlet or power strip circuit can provide, eliminating the risk of fires from overheating wires.

The cords are available in various lengths so installers can plug the necessary equipment or appliances into their power source and won't have to manage excess cord within an enclosure.

Stantron Racks says its IEC power cords work well when combined with its PowerMount system, which holds power strips in place with features such as power strip rotation (180 degrees) within the rack. Angling the power strips to correspond to the location of the equipment inlets creates a straight line from the power to the equipment, which the company says keeps cables and wires out of the center of the enclosure and reduces the risks of accidental disconnects, power interruptions and data loss.

Stantron Racks also offers lighting and cooling options to complement its power and cabling lines.

For more information, contact APWMayville in Wisconsin at (800) 558-7297 or visit www.apwmayville.com.

Pop Filter Splits Screens, Removes Outer Hoop

Middle Atlantic Products debuted the Split Screen Pop Filter, part of its Music Accessories line. Features include Air Pressure Dispersion Technology.

The Split Screen Pop Filter uses two individual screens with a separation space that diffuses harsh consonants combined with the removal of the outer ring to provide an added measure of air dispersion. The company says this design improves recording quality and clarity by allowing vocals to pass through to a microphone while filtering the "popping" effect of explosive vocal sounds like "p" and "b."

The separation of the screens and removal of the traditional outer hoop are a large part of what makes APDT effective, according to Middle Atlantic. When sound originates from a vocalist, it is diffused by the first screen, dispersed by the open space between the two screens and diffused once again by the second screen. "Pops" created by explosive consonants are eliminated before they reach the microphone.

Additionally, the Split Screen Pop Filter has no parallel surfaces between the two screens to avoid creating resonant frequencies within the pop filter hoop.

Middle Atlantic also introduced its IEC Power Cords, which allow AV integrators to choose a specific cord length when connecting components to a power strip, shortening cable runs within an enclosure and eliminating excess cable slack, loops and kinks. They are available in lengths of 6, 12, 18, 24 and 36 inches, and sold in packs of four.

For more information, including pricing, contact Middle Atlantic Products in New Jersey at (800) 266-7225 or visit www.middleatlantic.com.

World Radio History

DSPXtreme

AUDIO PROCESSOR

Extreme PROCESSING

The DSPXtreme is the newest addition to BW Broadcast's DSPX range of audio processors and we've included a few new features you wouldn't normally expect in an audio processor.

The first thing you will notice is the 2RU form factor which now includes two colour screens - one of which is touch sensitive. As well as looking great, the touch screen removes the need for jogwheels, joysticks and buttons allowing you to navigate, setup and control the DSPXtreme with a touch of your finger.

Behind the stylish front panel you'll find we've included more of the features that have made the DSPX range of processors among the best in the world. If you don't need all the features, no problem, the DSPXtreme is available in four different versions with tailored hardware and programming features: FM, AM, CD, HD.

For quality FM stereo broadcasting, the DSPXtreme-FM includes the world class stereo encoder found in the DSPX and DSPXtra. As well as the standard processing features you'd expect in a top-line processor, the DSPXtreme-FM has dual output paths allowing HD and FM services to be processed simultaneously without compromise. Simulcasting of FM and HD service is not a problem using the diversity delay feature.

With 6-Bands of audio limiting, distortion controlled clipping and look-ahead limiting you will have everything you need at your fingertips to create your own distinct sound for broadcasting or audio production.

Remote configuration and monitoring is simple with numerous connectivity options. These include an Ethernet port for LAN or WAN access, an RS232 serial port and an 802.11 (WIFI) Wireless interface. If you don't require a full user interface a remote trigger port is available that allows preset selection through contact closures.

You want more? No problem. The DSPXtreme has a flexible 'flash' upgradeable architecture which means that as we continue to make enhancements and add features, you can continue to reap the rewards. You can simply download the upgrades from our website.

www.**bwbroadcast**.com

BROADCAST

World Radio History

USER REPORT

RAM Modernizes Wisconsin Studios

by Jason Mielke
Chief Engineer
Bliss Communications Inc.

RACINE, Wis. Racine Broadcasting is owned by Bliss Communications Inc., which also owns West Bend Broadcasting and Southern Wisconsin Broadcasting. As chief engineer for Bliss Communications, I carry out my engineering duties at these three radio locations.

Over the years, Racine Broadcasting's studios saw cart machines replaced by computers, analog consoles replaced by surfaces and key systems replaced by modern, digital phone systems. Unfortunately, the studio furniture had not kept up with the times and the differing style from studio to studio was more reminiscent of a first apartment than a broadcast facility.

WEZY selected RAM's elegant SF2000 series surfaces.

Racine Broadcasting recently had three of its studios remodeled: the WEZY(FM) on-air studio, news studio and a production studio. We decided to modernize the look and feel of the studios. We had worked with RAM Broadcast Systems in the past — Southern Wisconsin Broadcasting's WCLO(AM)/WJVL(FM) in Janesville also bought some furniture a couple of years ago — so the decision to collaborate with them on this project was an easy one.

Made to order

RAM offers several customization options. When we set out to modernize three studios at Racine Broadcasting, we looked for furniture that is comfortable, functional and attractive. Ron Mitchell, president of RAM Broadcast Systems, played a key role in helping us choose our furniture.

Ron visited the studios to gather measurements and meet with the staff before proposing a custom solution that combined RAM's new tower style leg supports and SF2000 series surfaces, as well as several custom tabletop and floor racks. The result: comfortable, functional and attractive studios.

Installation of the furniture was simple. RAM Broadcast Systems drove the furniture to the studios and assembled it, even drilling holes in the countertops and mounting the microphone risers.

RAM offers three furniture series: the Economical SF1000 series, the Elegant SF2000 series and the Showcase SF3000 series. The difference between the three series is in the tabletop composition.

The SF1000 series tabletops are laminated and include T-molding around the edges. The SF2000 series features a top that is 1-1/2 inches thick with laminate and a choice between maple, cherry, oak, mahogany or walnut edgings stained in one of eight finishes. For an attractive upgrade to laminate, the SF3000 series boasts a solid surface in an assortment of patterns and finishes.

Although RAM offers different furniture tops to satisfy its customers' budgets, the three series share the craftsmanship and attention to detail that makes a studio comfortable and attractive. RAM's standard furniture packages consist of traditional U-shaped configurations combined with under-the-counter pedestal units, reversible punchblock panels, cable trays and 12 rack unit utility bays.

Guest wings, overbridges and script boards are optional furniture pieces available to better match the furniture to the studio. If your studio requires both standup and sit-down furniture, RAM has the solution for that as well: motorized surfaces that move up and down at the push of a button.

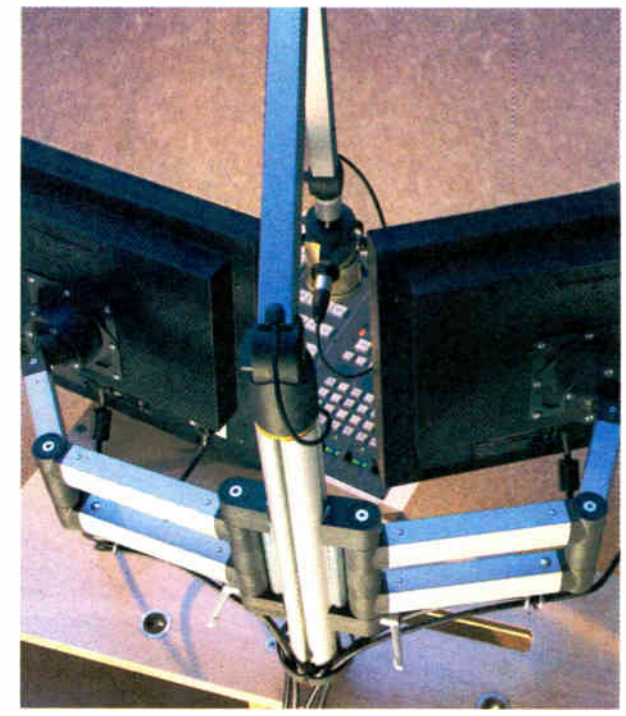
Since the completion of these studios, staff members are happy with their new work environments. Staff members from one of Racine's sister stations in another market were so impressed with the furniture, they asked for the same furniture in an upcoming studio rebuild project.

For more information, including pricing, contact RAM Broadcast Systems in Illinois at (847) 487-7575 or visit www.rambroadcastsystems.com.

TECH UPDATES

Yellowtec Offers Modular Concept for Desktop

Yellowtec says its m!ka Microphone and Monitor Support System's combination of mic and monitor mounts helps to restore order to the desktop area.



The m!ka monitor support system is described as the backbone of MSS. It is a modular concept for mounting and positioning multiple flat-screen displays. The four side profile slots of the MSS Pole allow up to four monitors to be mounted at the same height. Users can plug a mic arm into the top and create an editing station with two or three monitors side by side using one MSS Pole fixed to the desktop. The height of the MSS Monitor Arm offers extended horizontal reach.

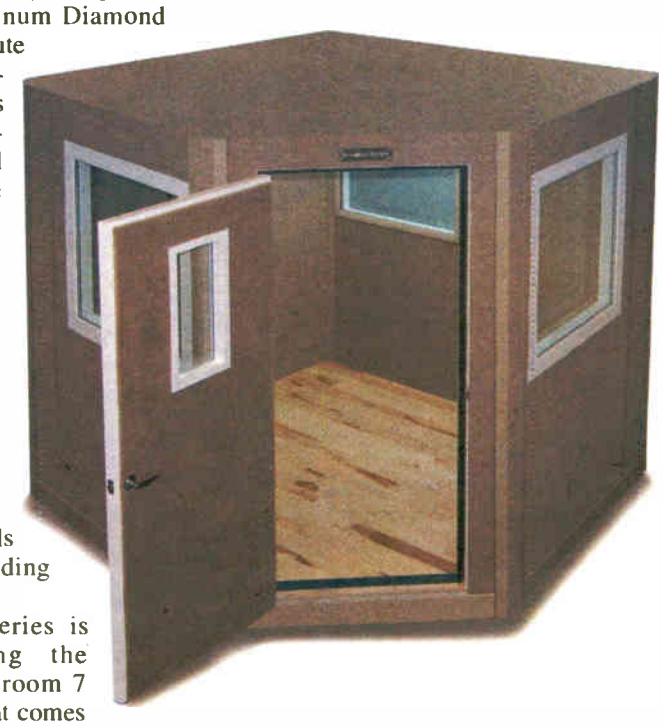
The m!ka MSS Microphone Arm features anodized aluminum with fiberglass reinforced synthetic joints. The internal linkage and coil spring construction is suitable for loads weighing up to 4.5 pounds, and remains hidden from view. The wiring also is hidden inside.

The company promotes the system's integrated LED indicator, asking, "Where better to display 'mic on' than next to the microphone?" Shipping of arms with on-air signaling starts in May 2008.

For more information, contact Yellowtec distributor Broadcasters General Store in Florida at (352) 622-7700 or visit www.yellowtec.com.

A Diamond Upgrade For Audio Program

VocalBooth.com recently completed the installation of a 10 Carat Platinum Diamond Booth for the Art Institute of Washington, an addition to the institute's audio production program. The program had been troubled with the difficulties of isolating vocals while conducting classes.



The Diamond Series is available in 3, 5, 10 and new 14 Carat sizes. Named for its shape, the Diamond Series is a five-sided booth intended for use in a corner of a room. The design also creates non-parallel walls that help to reduce standing waves.

The new 14 Carat series is the largest, providing the approximate size of a room 7 feet square. The 14 Carat comes in single-wall and more soundproof double-wall designs, as with other Diamond series. Booths can be assembled and taken down repeatedly. Customization options include colors, foams, fabrics, windows and wood floors.

The booth at the Art Institute included upgrades such as vent silencer units for low-volume recordings and a 3-by-3-foot window for easy viewing.

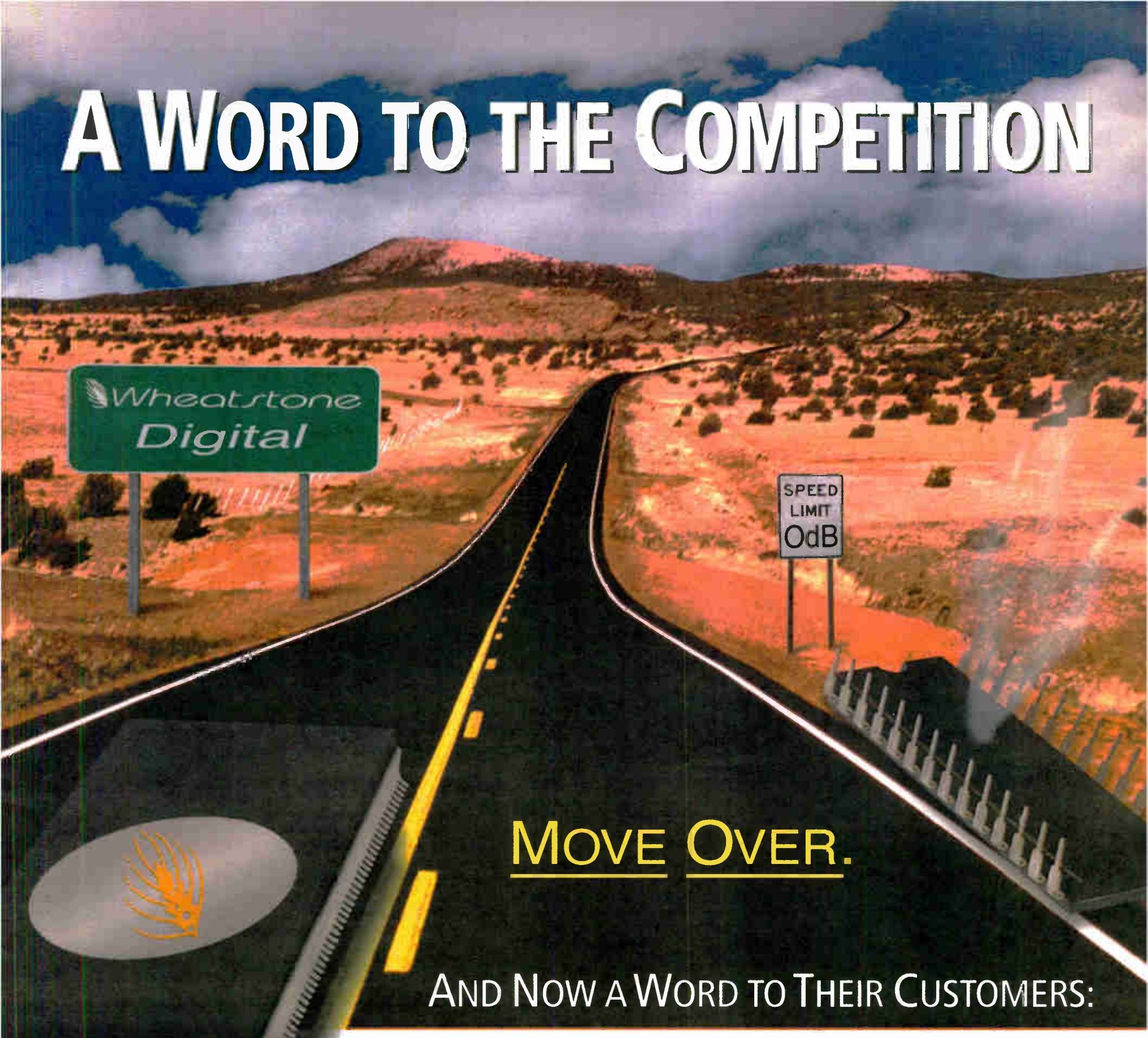
VocalBooth.com highlights the ease of setup and minimal time required. After hauling the booth in pieces to the 11th floor of the Art Institute, it says, the sound room was constructed in two hours. The tools needed were a screwdriver/screw gun and a razor blade for unwrapping materials.

The starting price for a Diamond Series booth is $4,060, including shipping to the lower 48 U.S. states.

For more information, contact VocalBooth.com in Oregon at (541) 330-6045 or via email at information@vocalbooth.com.

World Radio History

A WORD TO THE COMPETITION



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World Radio History

USER REPORT

KBBX Outfits Studios With QuickLine II

by Bill Nolan
Managing Member,
Broadcast Technical Associates;
Contract Engineer,
KBBX(FM), Connoisseur Media

WICHITA, Kan. Broadcast Technical Associates is a full-service engineering and integration company. Connoisseur Media recently contracted BTA to design and build four studios for two stations serving the Omaha, Neb., market: KBBX(FM) and a new station not yet on the air.

Connoisseur Media purchased KBBX from Journal Broadcast Group, and the company moved the station to a new facility with raw studio space. The plan was to build the new studios from scratch following a specific price point, with me leading the project as the station's contract engineer.

Harris QuickLine II System

To be considered

Studio furniture is an often-overlooked aspect of studio design and integration but has strong significance to a smooth on-air and production operation. The goal is to provide a long-term durable surface for the console and plenty of housing for rack equipment, while providing a comfortable atmosphere for interaction between host and guests. We decided on **Harris** QuickLine II furniture as the basis for the new studio designs.

BTA is part of Harris' new channel partner program, and we felt that QuickLine II was the best furniture solution for this project due its price point, durability and quick ship configurations. We contacted the Harris Pacific Research Center in Vista, Calif., and provided the room dimensions (12 x 12 for all four) and door locations for each studio. They returned CAD drawings compliant with access requirements and building code, and we ordered the furniture for near-immediate delivery.

The furniture is pre-fabricated and easy to put together, taking approximately two hours per room. It is designed specifically as broadcast furniture, with pre-drilled holes between sections for bolting pieces together. There are pre-installed knockouts in the countertops, i.e. large holes with plastic inserts to accommodate cable runs to and from the consoles and source equipment. The design hides the cabling very well, with removable access panels built in to for simple maintenance.

The tables are standing height and designed in an "L" configuration. The operator behind the main table faces two guest positions, and has a long return to the right with three rack systems. The Harris NetWave-16 console sits atop the surface at the main operator station, along with Google SS32 automation, 360 Systems Short/cuts and Call Editors and Alesis monitors.

The three rack systems contain TASCAM CD players, Symetrix 528E mic processors, Eventide broadcast delay units, Samson amplifiers and APC rack-mount UPS units among other components.

The on-air and production studios utilized the same QuickLine II furniture design, along with mostly the same studio equipment. This allows the station to use the production studio as an on-air room in an emergency situation, as they are virtual duplicates. The modular design of the furniture allows it to be arranged in many configurations to accommodate different studio layouts, but we utilized the same furniture design, as each studio has the same dimensions.

The stability of the furniture after assembly was the most impressive attribute. The tabletops, surfaces and edges have a sleek design, and the furniture looks more expensive than the actual cost.

No worries

We have had horror stories with furniture durability in the past. One recent project specified furniture from a competitive vendor, which delivered a countertop design with two separate pieces. The seam between the long return on the right and the short part of the L that comprises the surface for the console began to sag. This adversely changed the alignment of the surfaces.

We wound up placing 2-by-4s underneath the countertop to stabilize everything so that it did not collapse under the weight of the equipment.

The QuickLine II surface is delivered as a single piece, so the support is solid and in no danger of becoming destabilized. The benefit is the protection of the on-air and production equipment over the long haul.

The durability of this furniture, its quick setup and price point make it an excellent choice for stations seeking high-quality furniture in the studios but working under a tight deadline and budget.

For more information, including pricing, contact Harris Corp. in Ohio at (941) 639-1889 or visit www.broadcast.harris.com.

USER REPORT

Mager Tapped for News-Intensive Studios

Looking to Design Two New Studios, Salem Los Angeles Goes Back to Mager Systems

by Mark Pallock
Engineer
KKLA(FM)/KRLA(AM)

GLENDALE, Calif. When KKLA(FM) moved to Glendale in 1992, we were just a single FM station moving into new facilities at double the studio space we were used to. The studio furniture we were using at the time was very nice, and because of budget constraints we could not upgrade to something fancier.

By 2003 we had acquired five radio stations and our main talk studio had been redone three times. It was time to toss out the old furniture and equipment, and install something that would make the hosts' and clients' eyes pop. Enter **Mager Systems** of Phoenix.

I had talked to Mager Kizziah several times at the shows, had seen several of the studios he had created around the country and found each studio more stunning than the last.

Out of the box

In 2004 when we rebuilt our main KKLA studios, we got rid of the more institutional-looking studios and had Mager come in and work on studio design. Our general manager was open to being creative and wanted something out of the ordinary; he gave me the budget to create a studio like no other in the Los Angeles market.

I found Mager to be a master craftsman when it comes to furniture design and execution. We had purchased a Wheatstone D-5000 audio console. Mager took the console, removed the oak trim and custom-made trim from a material called Avonite. The color of the trim matched the color of the furniture, so as the console sits in the furniture it actually gives the impression that the console is molded into the furniture. It was and is a unique design.

This year our Newstalk station KRLA(AM) decided to get news-intensive, and the program director asked me to design two new news studios. Immediately I called Mager. He drew up several designs and we picked a design that everyone liked after much discussion with the news staff.

Mager's furniture is built from birch and features Avonite tops.

When you choose Mager to build your studios, you get exactly that: Mager and his crew arrive personally to build your furniture. The pieces and cabinets are not made of particleboard and Formica like you find at the local big box store. The main structure of the furniture is built from birch with Avonite tops for eye-popping work areas. The tops and sides are assembled on-site, and when they are done there are no seams. When our sales department gives tours to prospective clients, we hear, "I have never seen such great-looking studios, even here in Los Angeles."

Mager even helped design a full-blown production room out of a closet, which included the installation of equipment in file cabinets. He has built both stand-up and sit-down studios for us, depending on the station, format and preference of the talent using the studio.

The finishing touch to our studios is the furniture, even though this part of a broadcast facility is often overlooked because of budget constraints. Furniture may not seem like an important feature, but our people spend a lot of time in these studios and their comfort is important. Quality broadcast furniture is considered an important necessity at Salem Los Angeles.

For more information, contact Mager Systems in Phoenix at (623) 780-0045 or visit www.magersystems.com.

World Radio History

Products & Services SHOWCASE

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World Radio History

USER REPORT

Studio Technology Sets Up Downtown

by Mario Sfoliano
Engineering Supervisor
WOR Radio

NEW YORK In order to move a radio station, you first have to build your replacement site. Aside from the electronic equipment, you need the right furniture to fit the equipment and make it functional for the talent to do their shows.

We were lucky to find a company called **Studio Technology** from Kennett Square, Pa., near Philadelphia, when it moved to 111 Broadway, downtown. Vince Fiola and crew know how to build studio furniture, and try to accommodate your facility's needs. We had limited space for studios, and in the studios everything needed to be within arm's reach. The furniture for our new facility had to be custom-built for these requirements.

The air studios are identical, with the thought being that talent could be moved into a different room than the one they were used to and not feel out of place. The air studios and control rooms were the same size. This made the job a little easier for Vince, as he could make a template for one studio and simply copy the first room for all the others.

WOR Studio 4

Personal business

Vince Fiola came to New York to measure the actual rooms, and to sit with the WOR engineering department to find out what we really needed. Besides the countertops, the laminate colors and types, Vince needed to know how much rack space we needed and how the wires would be run to various places inside the furniture. He also needed to know how much air needed to move to keep our new Axia equipment cool.

We also have numerous computers in the furniture in the studios and control rooms, and Vince wanted measurements to make sure they would fit. The only thing we could not provide were the dimensions on the hole needed to drop the console into the countertop. Vince said this would not be a problem, and they would cut custom holes for the consoles during installation.

Studio Technology built the pieces at its facility and then shipped them to 111 Broadway to be assembled by its assembly crew. Having a relatively local company that could do the studio furniture assembly was a big plus because we were busy moving the offices and building the Master Control room. Plus, we knew the furniture would be assembled correctly.

Headphone Amp Panel

It took Studio Technology about 30 days to build the furniture and only two on site to put it together. It was a treat for me to see the pieces fit together perfectly; this included the base cabinetry, the turret cabinets and the work surface.

It also didn't bother the crew that we did not have a template for the hole for our new Axia consoles. They simply traced one of the consoles on brown paper and made their own so they could cut the holes for us.

One advantage of having furniture built by a company that is involved in broadcasting is that it knows rack dimensions. I have had other pieces of furniture where the rack rails were not lined up properly, and the equipment did not fit correctly. The Studio Technology furniture had rack space that was not only deep enough, but the rack rails were the correct distance apart and were square.

Another nice feature we added, at Vince's suggestion, was the rubber counter edge. This has held up very well over the past year and a half and has prevented ripped clothing in a few cases. Having the rubber edge also has helped prevent the laminate on the work surface from splitting as it absorbs bumps by chairs.

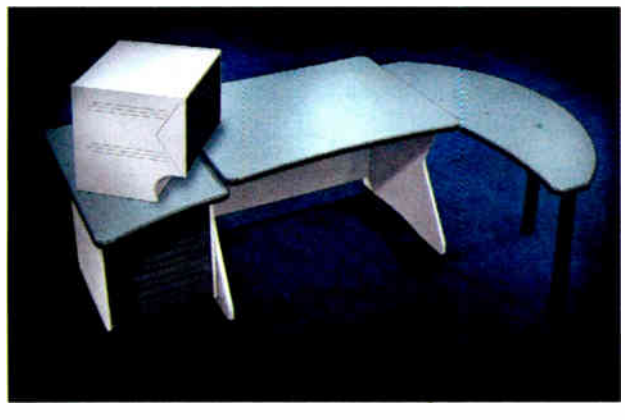
One of the issues we had was how to mount the remote microphone on/off and intercom buttons. Vince built custom cutouts in the work surfaces, trimmed with oak, to fit the Radio Systems button panels. We also needed a way to mount headphone amplifiers at each talent location. Vince custom-built mounts out of oak for the Radio Systems headphone amplifiers we used. The oak mounts and trim for the button panels looks very classy.

For more information, including pricing, contact Studio Technology in Pennsylvania at (610) 925-2785 or visit www.studiotechnology.com.

TECH UPDATES

A-Line Features Mix-and-Match Components

Wheatstone says configuring its Audioarts A-Line furniture system is simple. The user starts with a center desk to hold an audio console. Side counters of various sizes and shapes can be added and are mix- and match-able as the user sees fit. Configuration is complete after deciding on under- or over-counter rackmount cabinets/turrets. Components ship flat out of stock and are assembled using a Phillips head screwdriver.



Countertops are available in two versions, standard or with a curved rear interview overhang. Various side counters are added to the chosen center desk. Side counters come with tubular steel support legs and necessary mounting hardware and support brackets. Regardless of choice, components and shapes integrate as a modular system with all predrilled for easy assembly, according to the company.

System details include ventilation and wiring pass-throughs. Center desks are 31 inches high; come either standard or with rear interview overhang; and have an integral 12-inch-deep equipment shelf underneath that can double as a wiring trough. Side counters are 30 inches high and come with rigid tubular steel support legs.

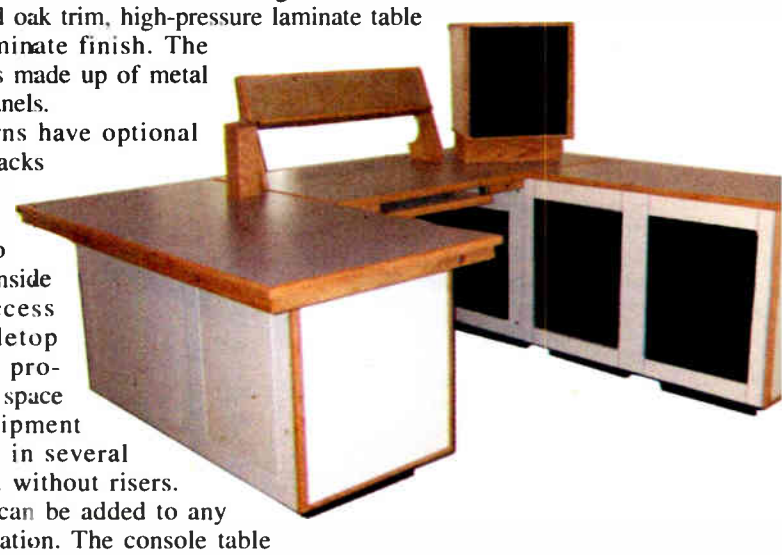
Equipment cabinets are rolling or stationary and are accessible with removable backs (undercounter, 12 rack spaces each; upper turrets, eight rack spaces).

For more information, including pricing, contact Wheatstone in North Carolina at (252) 638-7000 or visit www.wheatstone.com.

Sit Down, Stand Up With Modulux

Modulux modular furniture from **Graham Studios** can be assembled left- or right-handed and stand-up or sit-down, as well as basic configurations such as Short L, Long L, Short U, Unbalanced U and Long U.

It features solid oak trim, high-pressure laminate table surfaces and laminate finish. The modular design is made up of metal posts and wood panels.



Pedestal returns have optional front equipment racks and rear access doors. The table pedestals also have options for inside and outside access doors. The tabletop equipment pod provides rack mount space for tabletop equipment and is available in several heights with and without risers. Interview tables can be added to any tabletop configuration. The console table size can be selected to fit any console size.

Other options include copy stands, mic risers, headphone and turret control placement and media storage cabinets.

The company says a typical studio costs approximately $5,995.

For more information, contact Graham Studios in Colorado at (866) 481-6696 or visit www.graham-studios.com.

Graham Studios was founded in 1983 under a different name, sold to Arrakis in 1989 and purchased from Arrakis this year.

World Radio History

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Harris "Procast" stereo, 12 channel, full-featured broadcast console, factory new in the unopened box, manufactured by Henry Engineering (Henry Matchbox) for Harris Corporation. This is the same console as the Broadcast Tools "ProMix 12" , 12 channel stereo console that is currently listed in the BSW catalog for $1,299.00. The only difference is the cabinet is painted "white" with the Harris "Procast" logo. Asking Price: $995.00 with shipping included. Call 1-423-543-5849 . E-mail: billment@usit.net.

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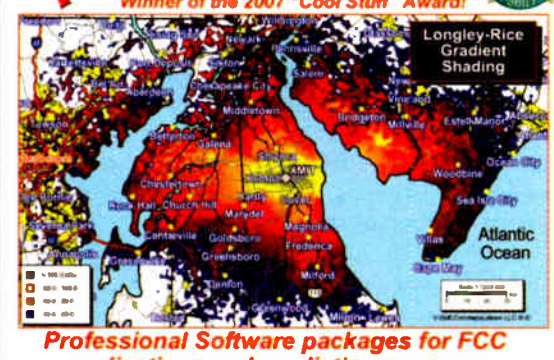

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ACTION-GRAM

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*Closing for listings is every other Friday for the next month's issue. All listings are run for 2 issues unless pressed for space or otherwise notified by listee.

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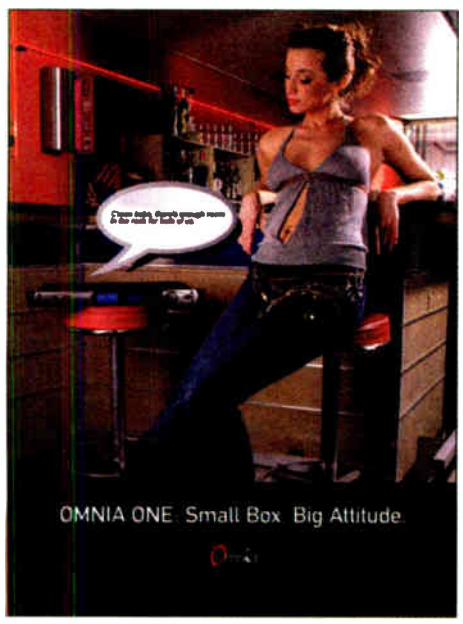
◆READER'S FORUM◆

Ad Racks Up Complaints

My staff and I were browsing some catalogs and distributor lists, as we were starting our search for new audio processing devices as we rebuild our U.S. broadcast operations.

I was looking at Omnia Audio's Web site and found a number of interesting pieces of hardware, but our head of purchasing mentioned she had seen its ad in a recent issue (June 6) and told me point-blank that if I even considered using Omnia Audio products, she'd quit. When she showed me its ad, I could understand why.



Its full page ad with the reference, "C'mon babe, there's enough room in the rack for both of us," with a picture of some "babe" standing at the bar ready to share room in the rack, might pass muster in a room full of rebuilt transmission repairmen, but not in the broadcast business.

Omnia might want to let someone in its ad agency know that we are now living in 2007, not 1957. Women aren't really keen to make large purchases from companies that feel it's amusing to treat women as sexual objects.

Keep in mind that more and more women are going to be making major purchasing decisions and the one who works in our organization just made sure that Omnia's products won't be sharing any room in our racks anytime soon.

Call us politically correct, but that's the reality of doing business in 2007.

Greg Fitzgerald
Coordinator,
U.S. Distribution and Marketing
DW-TV, DW-Radio, DW-WORLD
Natick, Mass.

Paul, the Omnia ad on page 9 of the new issue is, in a word, sexist! It's a shame that a company with such a fine product line and reputation feel, through its agency, the necessity to degrade woman to sell its equipment.

Good taste, like beauty, is in the eye of the beholder. Having been raised by my mother (now 94) due to the early death of my father at 46, women have always been far more than objects to me. And hardly "rack"-mountable.

I understand your position and don't disagree, though ad content in any media should compliment rather than distract from the content surrounding it. Any advertiser has the right to be obnoxious, allowing the marketplace to decide.

Steven T. Moravec
Phoenix Media Group Inc.
St. Paul, Minn.

There Ought to Be a Manual

Paul, I think RW's editorial was dead on ("Engineers Dissed Again," June 20). As you know, I'm always pushing for greater awareness, appreciation and acceptance of the engineering profession in broadcast in this country. Both sides — engineers and management — need to work together on this issue.

Have you considered producing a three- or four-page manager's guide to engineering? And perhaps one for engineers that would be their guide to management?

John Bisset has a very good PowerPoint presentation that he gives, which has a lot of good ideas. Make them glossy and on thick paper so they last a long time. I'd distribute them to every radio station in the country.

Gary Kline
VP, Corporate Engineering & IT
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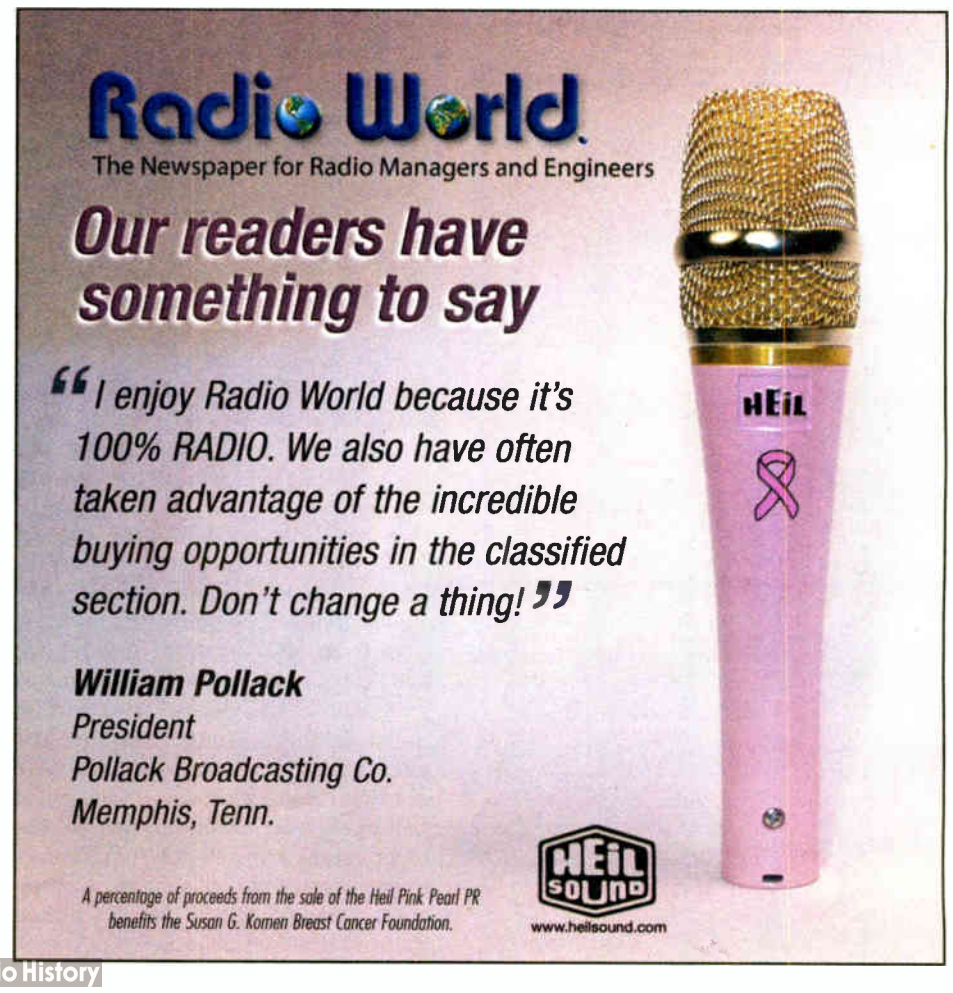

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NewBay Media

A Sense of Emergency

We Support Sen. Landrieu's First Response Bill

Winding its way through the Senate is the First Response Broadcasters Act of 2007. We applaud the ideas behind this bill and encourage its adoption.

Sen. Mary Landrieu of Louisiana is the principal sponsor of this bill, which would designate local radio and television stations providing disaster-related programming as "first-response broadcasters."

This doesn't mean that broadcasters must now become experts in providing first aid for victims of a natural disaster or suppliers of shelter to evacuees. Rather, the bill is designed to help broadcasters fulfill a vital communications mission when situations are at their bleakest.

Radio has a long history of serving the public in heroic fashion in emergency situations.

In recent years, disasters in New York City and New Orleans brought out the best in our community. Stations changed formats overnight so that they could provide continuous coverage to the public as these events unfolded. Competing owners shared broadcast facilities to keep stations serving their unique audiences. In the case of Hurricane Katrina, many station personnel risked their well-being and that of their families to continue working in desperate and dangerous conditions.

But there are flaws in federal rules and policies that govern the treatment of broadcasters in an emergency. Broadcasters are treated as simple civilians to be protected from danger. This undercuts our ability to provide news and information at critical moments.

During the aftermath of Katrina this even led to the confiscation of supplies of diesel fuel that had been privately contracted and provided for the use of broadcasters and intended for backup generators to keep stations on the air.

The bill would expedite access to a disaster area for broadcast technical personnel so that they could help keep operations alive or repair damage. It would also protect fuel and other supplies from seizure. Finally the bill offers a small grant program to help stations better prepare for an emergency, with money to be provided on a one-to-one matching basis.

Radio stations continue to be the most important communications systems in an emergency when it comes to reaching a mass audience. While many other systems play an important role in connecting people, none displays the robust and ubiquitous nature of radio, which can be received by listeners with widely available battery or hand-powered emergency radios. And radio service doesn't collapse when everyone tries to use it at the same time.

As Landrieu said in her introduction to the bill, referring to the role of broadcasters in the New Orleans disaster, "It was the only voice for them in the first darkest days and nights, and it continued for weeks and months."

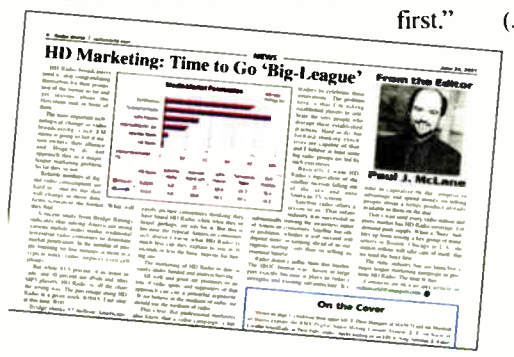
The First Response Broadcasters Act helps radio to better serve its communities when help is needed most.

— RW

◆READER'S FORUM◆

'Buzz' Might Be the Problem

Paul, I laughed when reading your recent editorial ("HD Marketing: Time to Go 'Big League,'" June 20) regarding HD Radio's market penetration: 0.001 percent, even after the industry's campaign of the past year. You said, "when a buzz bubbles up ... among a key group of trendsetters ... the station rollout will take care of itself. But we need the buzz first."


HD Marketing: Time to Go 'Big-League'

From the Editor

Paul J. McLane

On the Cover

New York's Rich Wood has called it "I–Buzz" instead of IBOC for years.

The "buzz" might be the whole problem, given that over the past year's deployment of "HD" on the AM band I've gradually become unable to even hear several of the Denver stations I used to listen to regularly; all of them slowly replaced by the adjacent-channel hash from "HD" stations in other markets, bringing the noise floor up and up.

As for FM IBOC, which still offers no more than "Internet stream-like" quality and noticeable BER dropout, the only real thing widespread deployment will likely offer once everyone has finally consumed the "I-Kool-Aid" is far higher copyright and music licensing costs once the RIAA decides that HD Radio is remotely relevant.

Be careful what you ask for, as they say.

Bill Sepmeier
CTO
Grid Feeders Smart Energy Alternatives
Vail, Colo.

To Tell the Truth

Paul, I have a number of issues concerning your HD Radio article/sell-job, "The Digital Forest Looks Pretty Green" (July 4).

You said, "HD Radio emerges as a custom-fit solution for bringing the radio industry into the digital age. This approach truly is elegant ..."

You're kidding — with adjacent-channel interference, half the coverage of analog, false claims of "CD quality," a chance to squeeze smaller competitors out of the marketplace, and the same tired programming as redundant, automated playlists.

"You'd wish for a rollout that allowed you to create profitable new information..."

I bet you would — consumers have been totally apathetic, which is highly unlikely to change: *http://tinyurl.com/25v8h3.*

"I know this sounds like a sell job..."

Boy, you've gotten that right!

"I am perfectly aware that some readers wish the question of the digital transition would just go away. They cite concerns about cost, interference ... or the perception that they're being dragged into it by bigger corporate entities."

You got that right!

"Among IBOC critics, the most paranoid sometimes say that big corporations, plotting with the commission and the NRSC, are forcing our industry into this change. Ignore them."

Yeah, that will make the criticisms disappear!

"Meanwhile, tuners are proliferating today. Multicast channels are being added; it's my prediction that soon one will 'break out' into national consciousness with an unexpected format or personality, one that will help create the consumer 'buzz' HD Radio craves."

When you can counter the articles/links I have posted below, then try writing the truth instead of a sell-job: *http://hdradiofarce.blogspot.com/.*

Greg Smith
Olney, Md.

Paul, great work with this one. You hit it out of the park. Thanks for the kick in the butt!

Mike Rice
President
Connecticut Broadcasters Association
Willimantic, Conn.

RW CoolCasts

These CoolCasts are terrific! Well done!

Larry Berger
Executive Director
SLB Radio Productions Inc.
Pittsburgh

Editor's Note: Radio World CoolCasts are on-demand video demos of products that won the "Cool Stuff" Award. Watch them at www.rwonline.com/coolcasts.

Seeing Yellow

Please do not use yellow lettering as appeared in the readouts or "pull quotes" of the July 4 issue. It is too hard to read.

Stanley Swanson
Yuma, Ariz.

World Radio History

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