



An Industry White Paper: HD Radio

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Radio For the 21st Century

HD Radio™ is a new technology that enables AM and FM Radio stations to broadcast their programs digitally, a tremendous technological leap from today's familiar analog broadcasts. These digital broadcasts provide listeners with radically improved audio quality and reception and new data services. Signal fading, static, hisses, and pops are a thing of the past. Data services such as displayed song and artist information, weather and traffic alerts, and much more will revolutionize the way consumers experience AM and FM Radio. And, as always, it's FREE.

Its anticipated impact is so significant that HD Radio received top honors with CNET's "Next Big Thing" Award at the 2005 International Consumer Electronics Show.

Consumers have consistently and rapidly adopted new digital technologies — CDs, MP3s, DVDs, to name a few — because of the improved quality, choice, convenience, and interactivity they provide. This consumer adoption trend shows no sign of slowing. HD Radio technology, now with the FCC's approval, can offer Radio listeners radically upgraded audio quality, along with an on-demand interactive experience and compelling new wireless data services.

HD Radio technology allows broadcasters to compete on the digital playing field of the 21st century and marks the most significant advancement in Radio broadcasting since the introduction of FM stereo more than 50 years ago. HD Radio technology provides advanced data and audio services such as surround sound, multi-casting (multiple audio sources at the same dial position), on-demand audio services, store-and-replay (listeners store a Radio program for later replay), overlaying real-time traffic information on a navigational map, a "buy" button, and a host of other services. HD Radio broadcasting is picking up steam across country. To date, 2,500 U.S. Radio stations, covering all major markets and reaching 90 percent of Americans, have committed to transforming Radio by upgrading their stations. Over 250 stations already are broadcasting in digital HD Radio technology, over 200 more are licensed, and broadcasters are joining the digital broadcasting revolution every week.

Stations from Boston to Los Angeles and beyond to Alaska and Puerto Rico are bringing HD Radio technology to communities large and small. Well-known stations KROQ-FM in Los Angeles and WOR-AM in New York are broadcasting with HD Radio technology and so are stations KZIA-FM in Cedar Rapids, IA, and WJLD-AM in Birmingham, AL, along with many, many others.

The conversion to HD Radio is unique in that the process allows the nation's 13,000 Radio stations to easily switch to digital without service disruption and while maintaining their current dial positions and station brand equity. HD Radio technology uses the existing infrastructure and spectrum, and at the same time, preserves the existing analog service for as long as necessary.

This means a seamless transition for the more than 200 million Radio listeners across the country. "Backward and forward" compatibility allows the reception of traditional analog broadcasts from stations that have yet to convert and digital broadcasts from stations that have already converted. Consumers can continue listening to their favorite local AM/FM stations on existing analog Radios as well as on new HD Radio receivers, allowing for a smooth evolution to a digital world.

Aftermarket auto receivers from Panasonic, Kenwood, and JVC are already for sale in stores across the country, and models from Alpine, Eclipse, and Sanyo are on the way. Home models are scheduled to launch later this year from Yamaha, ADA, Day Sequerra, and Rotel, as are tabletop versions from Boston Acoustics, Riveradio, and Polk.

What are the benefits of HD Radio Technology?

There are a host of new benefits that HD Radio technology provides with the upgrade to digital broadcasting:

- Enhanced sound fidelity
- Upgraded audio quality
 - AM digital will have FM audio quality
 - FM digital will have CD audio quality
- Improved reception
 - static-free, crystal-clear reception, without pops, hiss, or fades
- Advanced data and audio services:
 - surround sound
 - multi-casting (multiple audio sources at the same dial position)
 - on-demand audio services
 - store-and-replay (listener store a Radio program for replay later)
 - overlaying real-time traffic information on a navigational map
 - a "more information"
 - a "buy" button
- New wireless data services
 - scrolling text displayed on Radio screen including song titles, artist names, traffic updates, weather forecasts, sports scores, and more.
- A unique and easy conversion process
 - no service disruption
 - same dial position
 - maintain station brand equity
- A seamless transition for consumers
- Smooth evolution to a digital Radio world
- It's FREE! No subscription fees.

All of these enhancements to local AM and FM Radio are designed to better serve the listening public while offering tremendous growth opportunities for advertisers, broadcasters, manufacturers, retailers, and automotive manufacturers.

HD Radio levels the playing field with other digital technology, allowing stations to compete more aggressively for Time Spent Listening (TSL) and share of audience. It provides new revenue streams in the way of banner ads and scrolling text messages. Plus, with highly specialized programming on alternate channels, stations can deliver tightly targeted audiences, creating more opportunities for advertisers to integrate their brand with program content and connect even deeper with their customers.

Who developed HD Radio technology?

iBiquity Digital Corporation, the sole developer of HD Radio technology has worked for over a decade to produce a technology that appeals to consumers around the world. With input from Radio broadcasters, consumer electronics and broadcast equipment manufacturers, automakers, retailers, and consumers, HD Radio technology is the primary building block of an advanced digital broadcast solution. Derived from the idea that Radio broadcasting holds limitless possibilities for delivering digital services, HD Radio technology is now able to deliver a true end-to-end solution for terrestrial digital Radio broadcasting.

iBiquity Digital Corporation was created in August 2000 by the merger of the leading technology developers of AM and FM digital broadcasting, Lucent Digital Radio and USA Digital Radio. iBiquity Digital combined the technologies from both companies to develop the best solution for AM and FM Radio broadcasting. iBiquity Digital has been focused on commercializing digital Radio to offer crystal-clear CD-like sound and wireless data services to the consumer and to assist broadcasters in making the transition to digital in a cost-effective manner.

The Federal Communications Commission (FCC) approved HD Radio technology in 2002, and the commercial rollout of the technology began in 2003 when AM and FM stations around the country began digital broadcasts and continued with the launch of HD Radio receivers at the Consumer Electronics Show in January 2004.

As the market reaches maturity, broadcasters will transition out of analog broadcasts and offer “all-digital mode” in much the same way that television stations did with black & white programming.