

Digital Broadcasting Update: Changes are On Track

The U.S. digital television (DTV) changeover that will happen after February 17, 2009, has been well-publicized, as the FCC, broadcasters and TV equipment manufacturers all work together to inform the public of the approaching milestone. Broadcasters recently stepped up efforts to market their services for data and program delivery to portable wireless devices, using the additional digital capacity of the new transmission format.

OEMs are also increasing their output of DTV-enabled products. A supplier of integrated silicon tuners, Xceive Inc., confirms that activity. Neil Mitchell of Xceive noted that TV manufacturers were looking for several important features as they make the transition of designs from traditional metal can tuners to all-solid state products. Among the expected performance requests is high sensitivity, to aid performance with small antennas and indoor locations. Since Xceive's products include the analog-to-digital conversion circuitry, ADC performance is high on the list of customer concerns.

Somewhat surprising, Mitchell reports, is that NTSC performance is also important. After all, cable and satellite systems will continue to support analog TV formats until at least February 17, 2012. Recorded media will be around as long as individual consumers wish to keep their equipment in operating condition.

There are a few reports that the on-air public service announcements prepared by the National Association of Broadcasters are not effective with some viewers, but the online information at www.dtvanswers.com is comprehensive. [Your editor prefers the message used by PBS, featuring "This

Current HD Radio Features

- FM Multicasting – multiple programs on a single FM channel
- Static-free, crystal-clear reception
- FM sounds as sensational as CDs
- AM sounds as rich as analog FM stereo
- A variety of "data services," including text-based information – artist name, song title, weather alerts, school closings, etc. scrolled across your receiver display.
- Digital broadcasts in the same frequencies as analog broadcasts; today's stations remain at their current place on the dial
- Local content
- Free (advertiser-supported)

Future Additions

- Real-time traffic reports broadcast by local stations and visually displayed on a vehicle's navigation system
- Surround Sound
- Store-and-Replay – Will allow listeners to rewind a song they just heard or record an entire program to play back at a more convenient listening time
- On Demand Capabilities – Instant access to news and information
- "Buy" button – Will turn the radio into an interactive device for e-commerce, allowing for instant purchases such as concert tickets or advertised products

Features of HD Radio being promoted by broadcasters.

Old House host Kevin O'Connor and master carpenter Norm Abrams.] Even if some confusion remains, many local media outlets are supporting the publicity effort with additional information.

Digital Radio Formats

In the U.S., Ibiquity Digital Corporation's "HD Radio" technology (www.ibiquity.com/hd_radio) offers higher quality audio and more programming choice on local AM and FM radio stations. Like DTV, HD Radio offers additional programs and data transmission using the "HD2" multicast channels. No transition period is required like DTV, since the digital radio system is overlaid on existing analog radio transmissions.

According to Ibiquity, "...when you have a new digital HD Radio receiver, your AM sounds like FM, and FM sounds like CDs. In addition, the wireless data feature enables text

information – titles, artists, weather or traffic alerts – to be broadcast directly to your receiver's display screen."

Approved by the Federal Communications Commission in October 2002 as the only system for digital AM and FM broadcasting in the U.S., HD Radio technology is developed and licensed by Ibiquity. At present, more than 1,700 radio stations are broadcasting in digital, roughly 12 percent of all AM and FM stations. Major promotional efforts by stations and HD Radio receiving products were launched in 2007 and early 2008.

Key elements of HD Radio, according to promotional materials, are listed in Table 1. Since it is relatively early in market development, readers can expect to see much more promotion of HD Radio programming by broadcasters, and equipment by retailers and automakers.