



Audio Design Associates HD-Pro

by Don Danko
CBRE CBNT

Radio stations finally have an HD Radio monitor that can be mounted in a rack to interface with the professional equipment within a radio station. The HD-Pro tuner was my introduction to Audio Design Associates, and I am impressed with how the unit is designed and built. This receiver is loaded with options that make it helpful in the complete implementation and integration of HD Radio broadcasting at any station.

Cosmetically, the unit features a black, brushed aluminum look and enough LEDs to impress anyone. Realistically, the LEDs provide the status of the unit and the signal at a glance instead of paging through a menu structure. The front of the unit is well labeled. Another immediately noticeable feature is that the unit has dual HD Radio tuners built in. These tuners can also receive RBDS text along with AM and FM hybrid digital/analog signals, digital-only signals, analog-only signals and, as an added bonus, analog weather band broadcasts.

The headphone output can be switched between the two tuners with a push of a button, and the headphone amplifier has enough volume to overpower room noise or any other outside noise

two stations' audio levels. Although they are relative and do not provide a percent of modulation, they provide helpful information.

To the left of the unit is the main interface, which allows the user to change channels, read a station's RBDS text or HD Radio PAD and the station's frequency and call letters. In addition to tuning one channel at a time or using the seek function to scan for broadcasts, the user interface also provides an easy way to directly tune a frequency. It was necessary to add a switch to allow for the display/control to be used for both tuners. The two buttons are clearly labeled which, along with an indicator LED for each, eliminate any confusion as to which tuner the display/controls actively affect.

Anyone who has set up HD Radio processing will tell you that syncing the analog audio and digital audio is a necessity. Complicating this matter is that broadcasters have few options to listen to the analog signal and the digital signal simultaneously. One of the most useful features of this unit is the split-mode feature. In this mode, the audio output provides the analog signal in the right channel and the digital in the left channel. This feature, along with an oscilloscope, will provide an easy method of fine tuning the delay.

Another useful feature is a toggle mode button to force the receiver to digital, analog and analog mono modes. The manual points out that the analog mono mode is useful for weak signals that float in and out of stereo mode. The unit also features a switchable high-frequency roll-off filter for AM and FM and a voice band-pass filter for the weather band.

Performance at a glance

Receives AM, FM and weather bands

Provides split mode, alarm contacts, dual tuners, LED indicators

Dual receiver design with dual audio outputs

Balanced and unbalanced analog outputs

AES3 and optical digital outputs

Front-panel headphone output

RBDS and HD Radio PAD readout

to allow for more controlled monitoring. The RF meters have one LED to indicate that an HD Radio signal is available, another to indicate that an analog pilot is present and a 10-segment RF level meter. The RF level is also available as a number from one to 10 on the display with a few keystrokes. I tested the receiver with an external antenna as well as a paper clip antenna to help determine the limits of the tuner. The non-technical paper clip antenna proved that the sensitivity of the tuner was sufficient to pull in weaker signals with full quieting.

Full metering

Audio meters for the left and right channels of both tuners sit between the two-tuner RF meters. They are easy to read, fast-acting 20-segment LED meters and are labeled from -40dB to +3dB. Having them side-by-side allows you to compare

The back panel

The real estate on the rear panel of the receiver is used for interfacing options. The tuner outputs include AES/EBU balanced digital and TOS-Link optical digital outputs. In addition, there are balanced XLR and unbalanced RCA outputs. Both tuners feature F-connectors that can be

helpful if the two stations being monitored are in different directions.

Another bonus feature is the alarm capabilities built into the unit. Each tuner has an alarm relay that can be set to trip for low RF level, low left or right audio level or loss of the HD Radio signal. A set of DIP switches customize which one, two or three of the above conditions will trigger the alarm relay. The unit also provides an alarm adjustment to set the time interval between zero and 30 seconds and has a power up timer to deactivate alarms for a programmable time period. Both help eliminate false triggering. The RF level trip set (low level threshold) is set using an adjustment pot for each tuner and the corresponding LED. The user has a choice of a normally open or normally closed contact to signal external indicators or remote control equipment. Computer integration and control is also included via an RS-232 or Ethernet port.

The HD-Pro tuner can be configured and operated with a crossover cable and a PC. Changing channels, broadcasting band, audio modes, engaging the filter and reading the RBDS is accomplished

using the included software. The manual discusses the uses, features and set-up of the equipment but doesn't delve into operational issues, which would be useful.

Overall, I found the HD-Pro tuner to be intuitive, and well designed and built. 

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The rear panel of the HD-Pro