

## HD RADIO INTRODUCTION

The HD Radio digital broadcasting system, employed principally in the U.S., is the hybrid broadcasting system developed by iBiquity Digital Corporation. By 'hybrid' we mean that the all-digital signal carrier is transmitted 'on-channel' simultaneously with the traditional analog FM (or AM) carrier. Legacy radios are thus able to receive the program in the usual manner, and new HD Radio receivers can recover both the analog and the digital versions of the program

**Time Alignment** The HD Radio digital coding/decoding process occupies some 8 seconds. This means that measures must be taken to delay the analog FM signal so that it is in sync with the digital program.

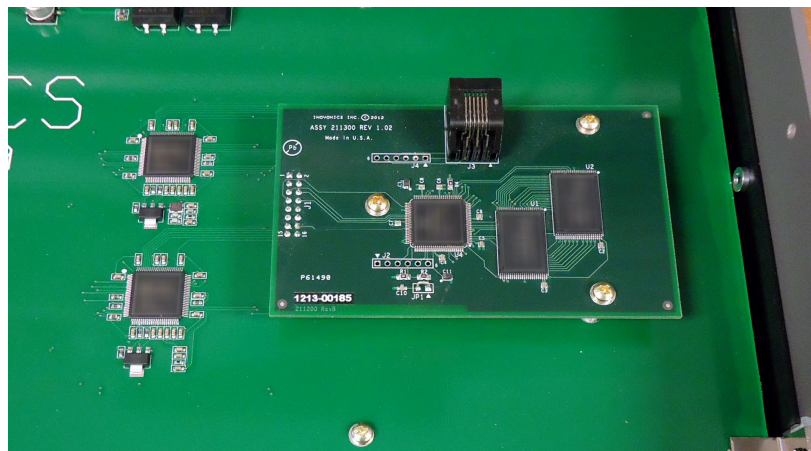
This time-aligning "diversity delay," as it is called, is enabled in the DAVID IV with an optional accessory circuit board that is simply plugged into a header strip on the main board. Installation and use instructions are outlined below.

**Rev. 2  
Firmware  
and Software  
Required**

The HD Radio delay provision for the DAVID IV requires that the unit first have Rev. 2 firmware installed, and Rev. 2 software running on any associated PC for remote control of the processing functions. Rev. 2 firmware and software may be downloaded from the Inovonics Website, along with the Rev. 2 manual.

## INSTALLING THE DELAY BOARD

If you are adding the HD Radio delay option in the field, first disconnect power from the unit. Next remove the top cover and install the accessory board as shown in the snapshot below.



Mounting standoffs are already in place on the DAVID IV main board. Simply plug the accessory board squarely onto the main-board header strip so that the three mounting holes line up.

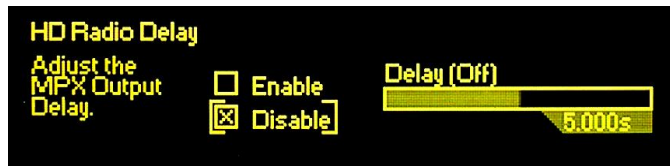
Then fasten the board down with the screws provided with it. The DAVID IV will recognize the board when it boots, and you can then access and set up the delay menu.

NOTE: The HD Radio Delay menu cannot be accessed if the accessory board is not installed, or has been installed incorrectly, and Rev. 2 firmware/software must be installed as well.

## ADJUSTING THE DELAY

HD Radio delay may be set either from the front panel, as described here, or using the software interface.

Use the DAVID IV front-panel jog wheel to navigate to: Setup / HD Radio Delay:



HD Radio delay may be set in 1 millisecond increments anywhere between 1ms and 9.999 seconds. This is a much wider range than required, but anticipates welcome improvements in the encoding/decoding process of the HD Radio system.

To enable the delay, highlight and select:  Enable. Next, Highlight the Delay slider and then *push* the knob.



Now *turn* the knob to set the time to 8 seconds and *push* it to activate the setting.

NOTE: To obviate frustration and blisters, the DAVID IV will race through the 1ms increments at an accelerated rate when the jog wheel is turned fast and furiously. Turn the jog wheel slowly for precise 1ms steps. Keep in mind that the setting will not become active until the knob is pushed. Pushing the knob commits the setting to memory.

### **'Split Mode' Receiver**

The delay is most easily set using an HD Radio receiver that can be put into the "split" mode, where the analog program is heard in one stereo channel and the digital program in the other. *Turn* and *push* the jog wheel to hone-in the timing so that there is no discernible echo heard.

An HD Radio receiver in its normal operating mode will fade from analog to digital within a few seconds after the station is tuned. Tune away from your station and then tune back again. The transition should be 'seamless,' with no echo, gaps, stuttering or level shift as the radio cross-fades from analog to digital.