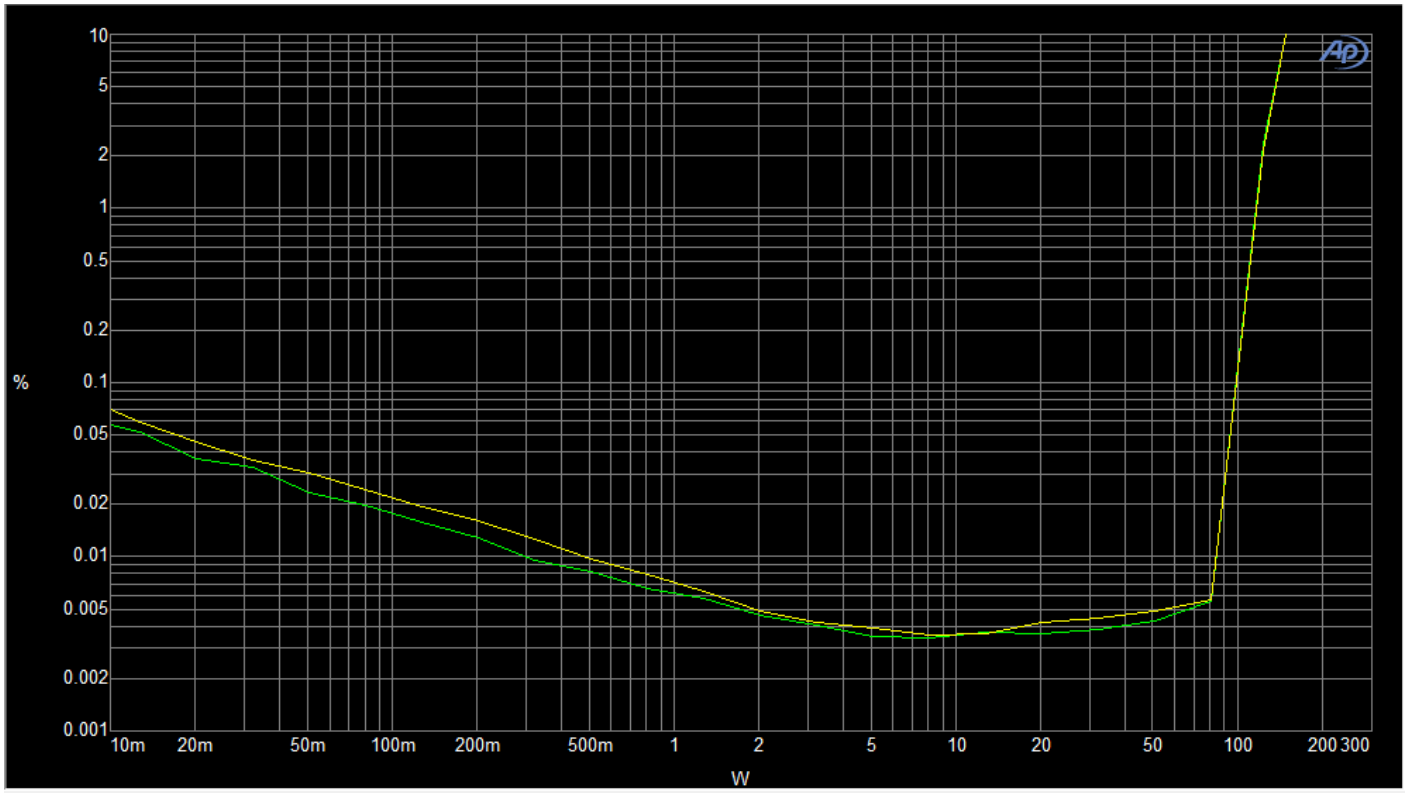
Test Report
November 2015

TIDA-00874 – High Fidelity 175W Class-D Audio Amplifier with Digital Inputs and Processing Reference Design

Test data for this design was taken using the optical digital audio input. A supply voltage of 36V was provided to the board. The TPA3251D2 was setup in 2 channel BTL mode with 4ohm loads. The PCM5242 was set to a gain of 0dB with no filters.

The TAS1020B USB interface is used for configuring the PCM5242 in an evaluation setting. With both I2S and I2C from the TAS1020B, digital audio can be evaluated from a host computer as well as register configuration of the PCM5242. In an end system, I2C commands would be written to the PCM5424 by the system processor. A secondary I2C source can be connect to the reference design board via the SCL and SDA test points if needed. USB audio can be used by any device that converts USB audio data into an I2S format.

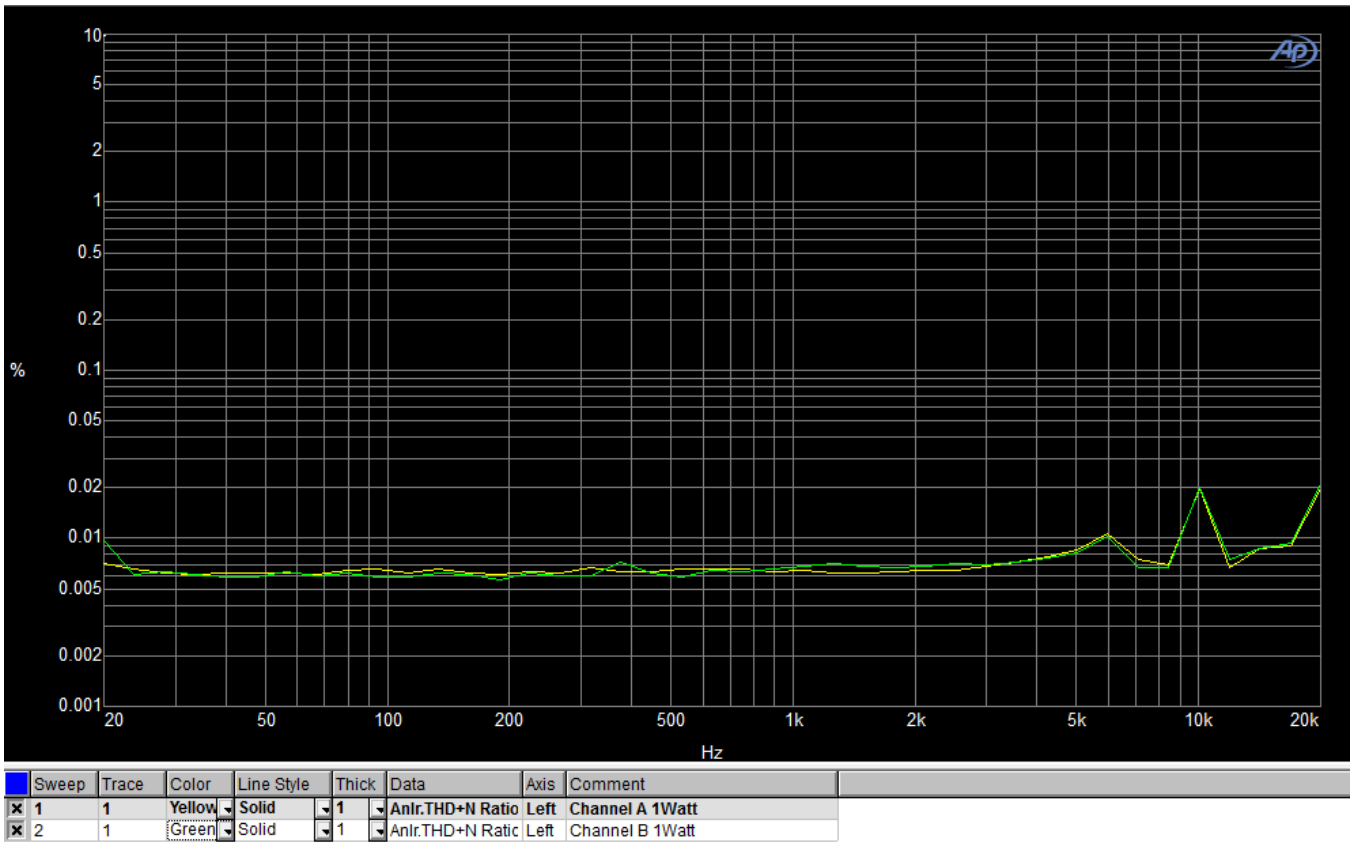
The audio performance was then measured as show in the plots below.



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Green	Solid	1	Anlr.THD+N Ratio	Left	Channel A
2	1	Yellow	Solid	1	Anlr.THD+N Ratic	Left	Channel B

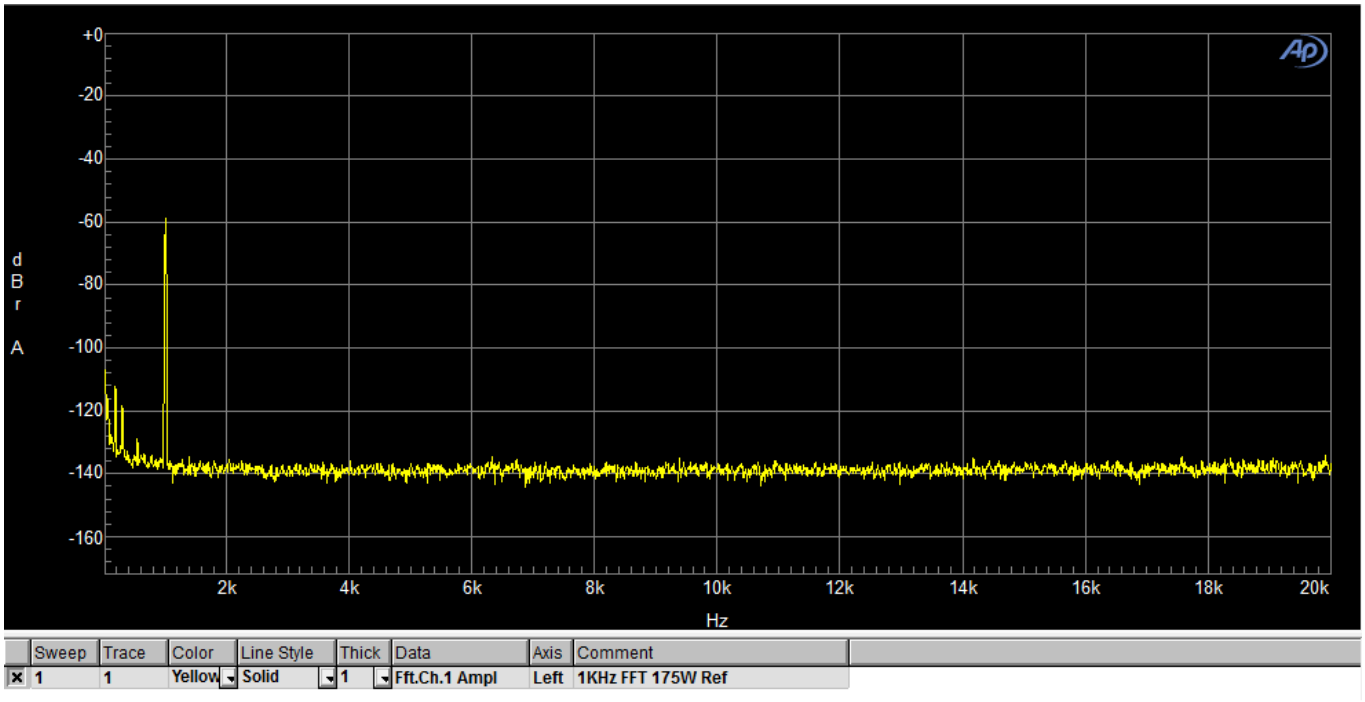
THD + N Vs Output Power 4ohms

This board achieves 175W into 4ohms at 10% THD + N
THD + N <0.004% at 10W

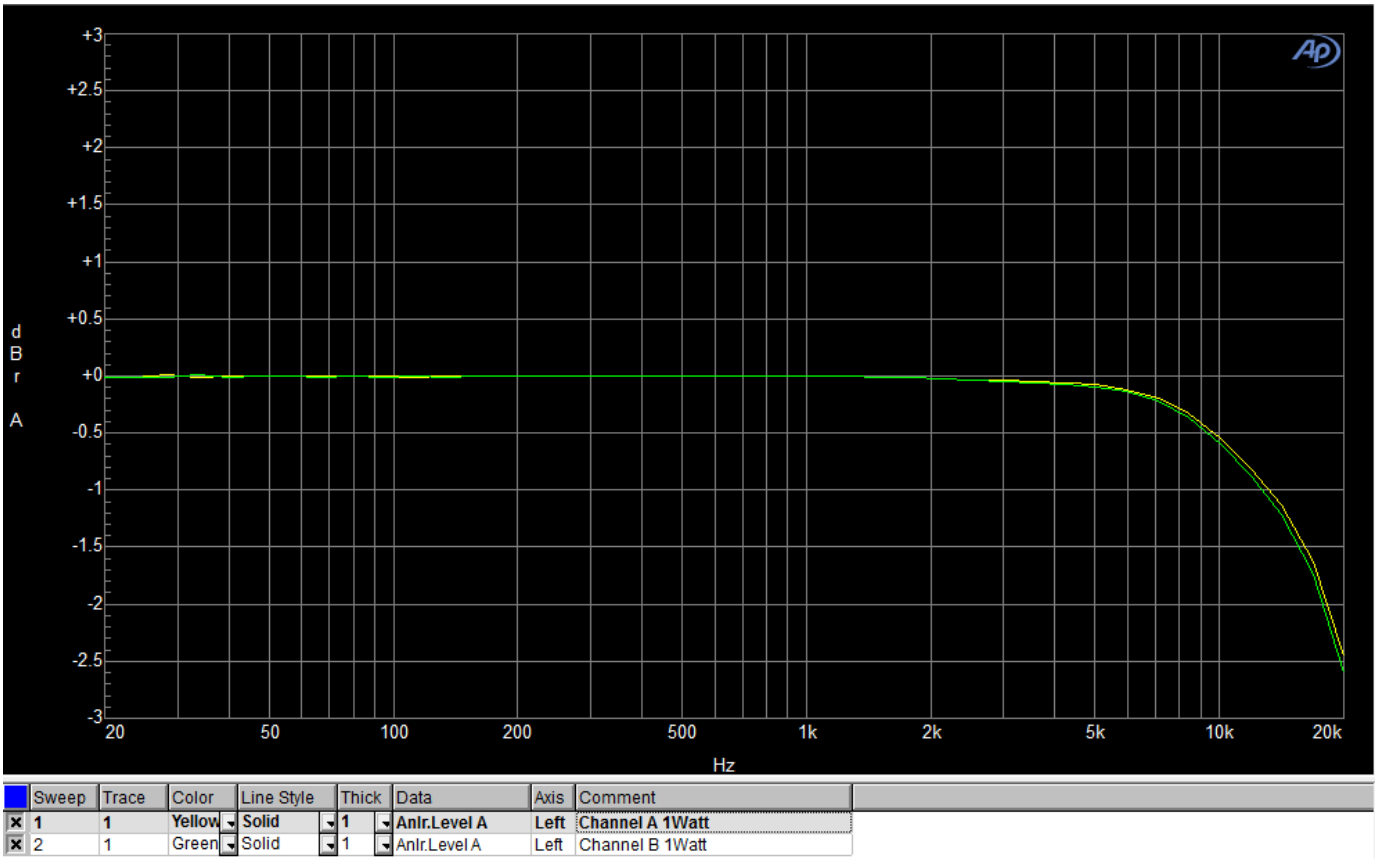


Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Yellow	Solid	1	Anlr.THD+N Ratio	Left	Channel A 1Watt
2	1	Green	Solid	1	Anlr.THD+N Ratio	Left	Channel B 1Watt

THD + N Vs Frequency @ 1Watt 4ohms



FFT -60dB Reference to 175W (10% THD + N) 4ohms



Frequency Response 1W 4ohms (Measurement setup uses 20KHz cutoff)

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