

## *TIDA-00609 Test Report, TI Design*

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### ABSTRACT

The PurePath™ Console Motherboard (PPCMB) has several signal path options available to easily evaluate TI devices. Performance plots of common signal paths are provided in this report as reference.

### Document History

Version	Date	Author	Notes
1.0	May 2015	J. Arbona	First release

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## 1 Test Setup

- TAS5766MDCAEVM attached to the PurePath™ Console Motherboard RevF (PPCMB).
- External 24V/12V supply connected to TAS5766MDCAEVM.
- An 8-ohm resistive load connected to the TAS5766MDCAEVM output.
- TAS5766MDCAEVM output connected to the Audio Precision SYS-2722 balanced inputs. The 20kHz AES17 filter option is selected.
- Optical cable connected between OPTO-IN and AP optical input.
- Analog cable (3.5mm to phono) connected between AIN1 and AP Analog Analyzer input.

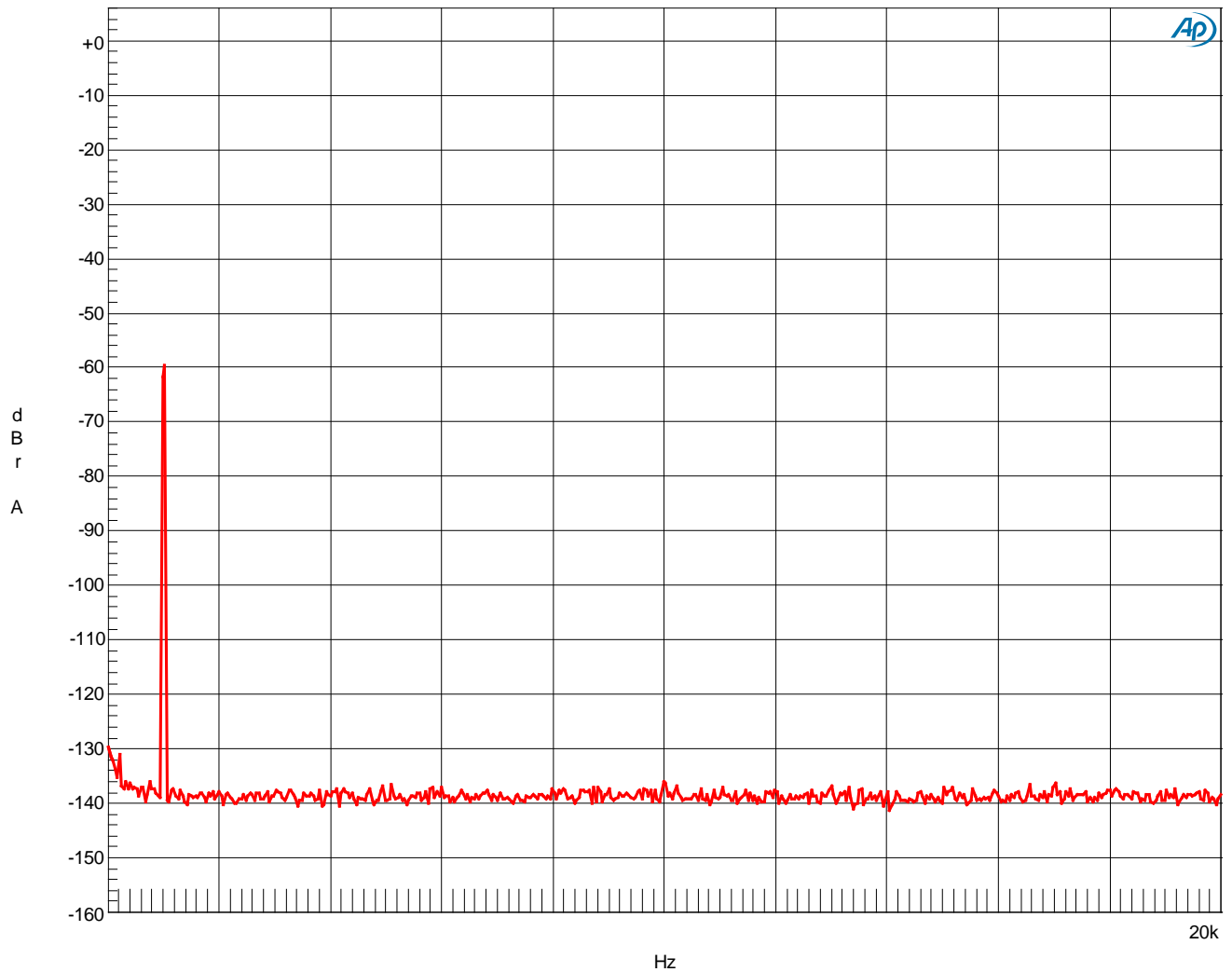
## 2 Optical Input to Class-D Output Noise Floor FFT

Figure 1 illustrates the PPCMB+TAS5766M noise floor when excited by a -60dB signal.

Audio Precision

FFT - 20dB / 0dB / 24V / 8-ohm / 768kHz

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Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Red	Solid	2	Fft.Ch.1 Ampl	Left	-60

5766\_FFT.at27

**Figure 1. Optical Input to Class-D Output Noise Floor FFT**

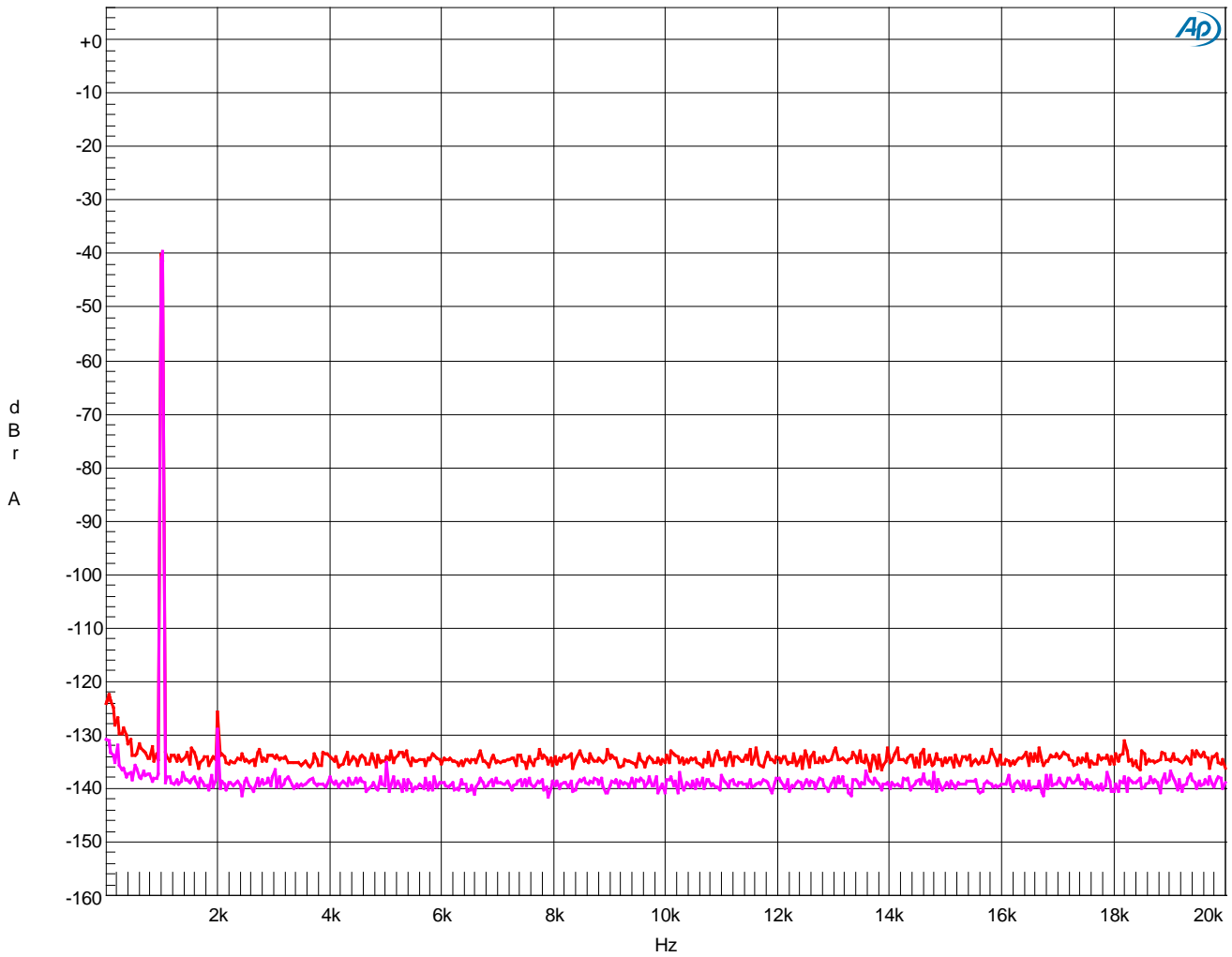
### 3 Optical Input / Analog Input Comparison

Figure 2 compares the PPCMB+TAS5766M noise floor performance between the Optical input and the AIN1 analog input.

Audio Precision

FFT - 20dB / 0dB / 24V / 8-ohm / 768kHz

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Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Red	Solid	2	Fft.Ch.1 Ampl	Left	Analog In
2	1	Magenta	Solid	2	Fft.Ch.1 Ampl	Left	Optical In

5766\_FFT\_analog\_vs\_optical.at27

**Figure 2. Optical Input / Analog Input Comparison**

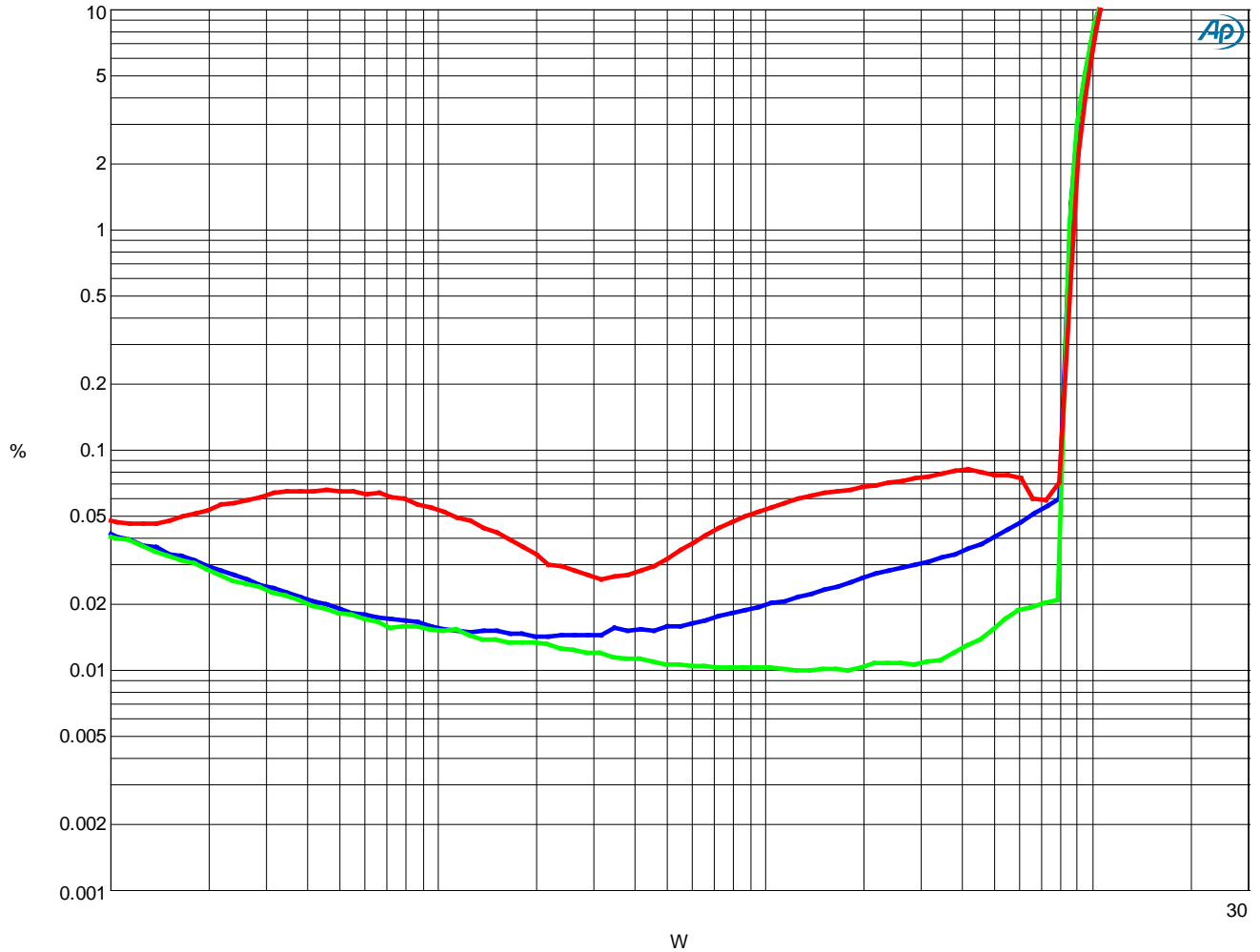
### 4 Total Harmonic Distortion + Noise (THD+N) vs Power

Figure 3 shows the PPCMB+TAS5766M performance when driving high current loads.

Audio Precision

THD+N vs Power - 20dB / 0dB / 12V / 8-ohm / 768kHz

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Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Blue	Solid	3	Anlr.THd+N Ratio	Left	20Hz
2	1	Green	Solid	3	Anlr.THd+N Ratio	Left	1kHz
3	1	Red	Solid	3	Anlr.THd+N Ratio	Left	6kHz

5766\_THD\_N\_vs\_Freq.at27

**Figure 3. THD+N vs Power**

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