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

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Author</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>May 2015</td>
<td>J. Arbona</td>
<td>First release</td>
</tr>
</tbody>
</table>

Contents

1 Test Setup .................................................................................................................................2
2 Optical Input to Class-D Output Noise Floor FFT .................................................................3
3 Optical Input / Analog Input Comparison ..............................................................................4
4 Total Harmonic Distortion + Noise (THD+N) vs Power ..........................................................5

Figures

Figure 1. Optical Input to Class-D Output Noise Floor FFT ......................................................3
Figure 2. Optical Input / Analog Input Comparison ......................................................................4
Figure 3. THD+N vs Power ..............................................................................................................5

Tables

Document History ................................................................................................................................1
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.

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 02/25/15 22:00:47

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.

![THD+N vs Power](image)
IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATA SHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES “AS IS” AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, regulatory or other requirements.

These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to TI's Terms of Sale or other applicable terms available either on ti.com or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products.

TI objects to and rejects any additional or different terms you may have proposed.

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
Copyright © 2021, Texas Instruments Incorporated