**DEQX Pty Limited**
ABN 39 078 435 060
Tel: +61 (0)2 9905 6277
Email: sales@deqx.com

# PDC 2.6 Technical Specification 050524-1

## 1. Introduction

The DEQX Calibrated™ PDC-2.6 Processor is a 2-input, 6-output digital processor offering individual speaker driver correction, extremely high order digital crossovers (up to 300dB/octave), room correction, time alignment, and much more.

This document provides a basic specification for the filtering possible using the DEQX Calibrated™ PDC-2.6 Processor, as well as measurements of the converter stages used on a standard PDC-2.6 or PDC-2.6P.

All measurements are taken using an industry reference Audio Precision S2 Dual-Domain analyzer.

### 1.1 Filter processing

| Specification | Conditions | Value | Unit |
|---|---|---|---|
| Crossover frequency resolution | | 1 | Hz |
| Crossover slope (min) | Linear phase | 48 | dB/Octave |
| | Butterworth | 6 | dB/Octave |
| | Linkwitz-Riley | 12 | dB/Octave |
| Crossover slope (max) | Linear phase | 300 | dB/Octave |
| | Butterworth | 300 | dB/Octave |
| | Linkwitz-Riley | 300 | dB/Octave |
| Time alignment resolution | 48kHz | 0.02 | ms |
| Magnitude correction | default value (user can set arbitrarily) | 0.2 | dB |
| Group delay correction | default value (user can set arbitrarily) | 0.5 | ms |
| Speaker correction filter length | 48kHz, firmware v58.7 | 4096<br>85.3 | taps<br>ms |
| Parametric EQ bands | | 10 | |
| Parametric EQ resolution | | 1/12 | Octave |
| Parametric EQ frequency resolution | | 0.01 | Hz |
| Parametric EQ gain resolution | | 0.01 | dB |

### 1.2 RCA Output Measurements – PDC 2.6P

| Measurement | Conditions | Value | Unit |
|---|---|---|---|
| Full Scale Level | Jumper setting 1 | 0.83<br>+0.6 | $V_{rms}$<br>dBu |
| | Jumper setting 2 (Default) | 1.66<br>+6.6 | $V_{rms}$<br>dBu |

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| | | | |
|---|---|---|---|
| | Jumper setting 3 | 2.04<br>+8.4 | $V_{rms}$<br>dBu |
| | Jumper setting 4 | 2.42<br>+9.9 | $V_{rms}$<br>dBu |
| | Jumper setting 5 | 3.97<br>+14.2 | $V_{rms}$<br>dBu |
| Dynamic Range | | -108.9 | dB-A |
| THD | 1kHz, -6dBFS | -118<br>0.00013 | dB<br>% |
| | 1kHz, 0dBFS | -103<br>0.0007 | dB<br>% |
| | 5kHz, -6dBFS | -108<br>0.0004 | dB<br>% |
| | 5kHz, 0dBFS | -100<br>0.001 | dB<br>% |
| Frequency Range | 10Hz | -0.03 | dB |
| | 22kHz | -0.225 | dB |
| Impedance | | 75 | Ohms |

### 1.3 RCA Input Measurements – PDC 2.6P & PDC 2.6

| **Measurement** | **Conditions** | **Value** | **Unit** |
|---|---|---|---|
| Full Scale Level | Jumper setting 1 (Default) | 2.3<br>9.5 | $V_{rms}$<br>dBu |
| | Jumper setting 2 | 3.4<br>12.8 | $V_{rms}$<br>dBu |
| Dynamic Range | | -107.4 | dB-A |
| THD | 1kHz, -6dBFS | -120<br>0.0001 | dB<br>% |
| | 1kHz, 0dBFS | -106<br>0.0005 | dB<br>% |
| | 5kHz, -6dBFS | -112<br>0.0003 | dB<br>% |
| | 5kHz, 0dBFS | -107<br>0.0005 | dB<br>% |
| Frequency Range | 10Hz | -1.2 | dB |
| | 22kHz | -0.1 | dB |
| Impedance | | 47k | Ohms |

### 1.4 XLR Input Measurements – PDC 2.6P & PDC 2.6

| **Measurement** | **Conditions** | **Value** | **Unit** |
|---|---|---|---|
| Full Scale Level | | 6.0 | $V_{rms}$ |

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| | | | |
|---|---|---|---|
| | | 17.9 | dBu |
| Dynamic Range | | -111.7 | dB-A |
| THD | 1kHz, -6dBFS | -122<br>0.00008 | dB<br>% |
| | 1kHz, 0dBFS | -106<br>0.0005 | dB<br>% |
| | 5kHz, -6dBFS | -116<br>0.00016 | dB<br>% |
| | 5kHz, 0dBFS | -112<br>0.00025 | dB<br>% |
| Frequency Range | 10Hz | -1.1 | dB |
| | 22kHz | 0 | dB |
| Impedance | | 47k | Ohms |

### 1.5 Digital-in to digital-out Specification – PDC 2.6P & PDC 2.6

| Measurement | Conditions | Value | Unit |
|---|---|---|---|
| THD | 48kHz, 0dBFS, 1kHz | -156 | dB |
| | 48kHz, 0dBFS, 5kHz | -152 | dB |

### 1.6 Digital output Specification – PDC 2.6P & PDC 2.6

| Measurement | Conditions | Value | Unit |
|---|---|---|---|
| External Clock Sync Frequency (min) | | 32 | kHz |
| External Clock Sync Frequency (max) | | 96 | kHz |

### 1.7 Latency Measurements

Impulse filters (Bypass mode) selected for all latency measurements

| Measurement | Conditions | Value | Unit |
|---|---|---|---|
| D-D | 48kHz | 2.4 | ms |
| | 44.1kHz | 2.6 | ms |
| A-D | 48kHz | 3.2 | ms |
| D-A | 48kHz | 3.4 | ms |
| | 44.1kHz | 3.7 | ms |
| A-A | 48kHz | 4.2 | ms |

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## 2. Measurement graphs

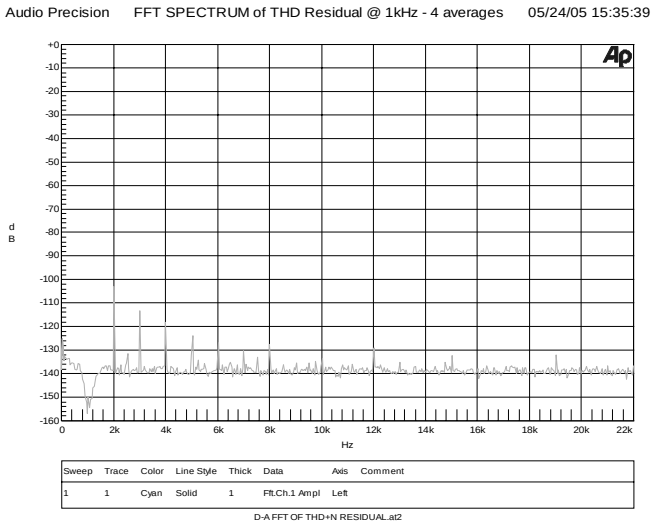


**Figure 1 – RCA output, 0dBFS@1kHz**

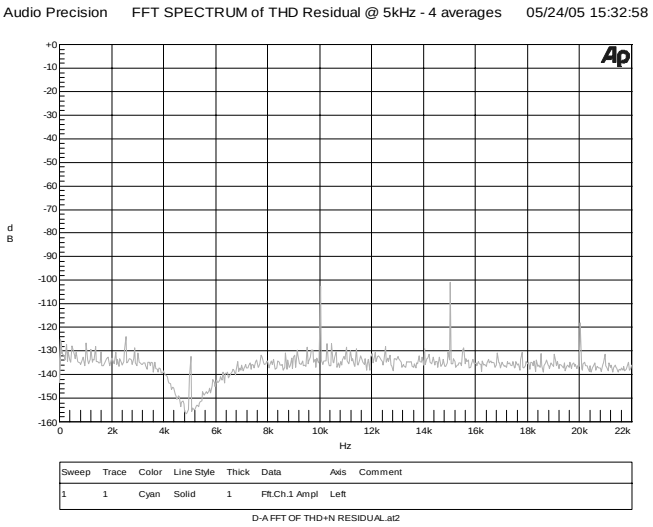


**Figure 2 – RCA output, 0dBFS@5kHz**

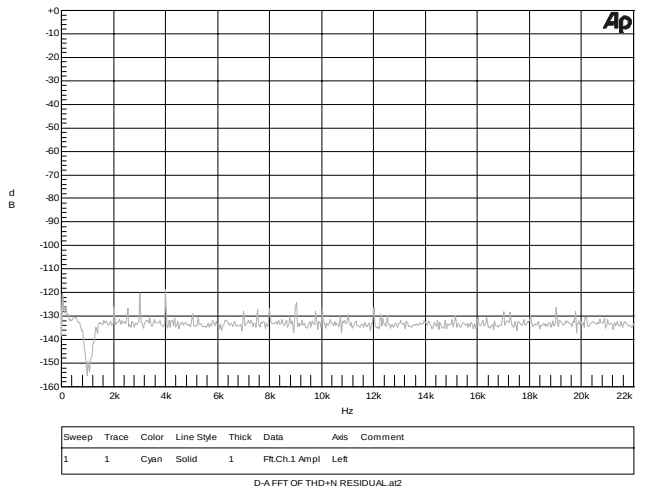


**Figure 3 – RCA output, -6dBFS@1kHz**

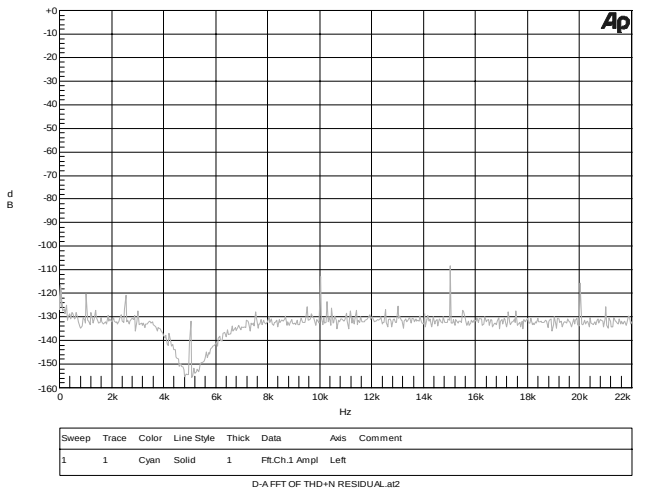


**Figure 4 – RCA output, -6dBFS@5kHz**

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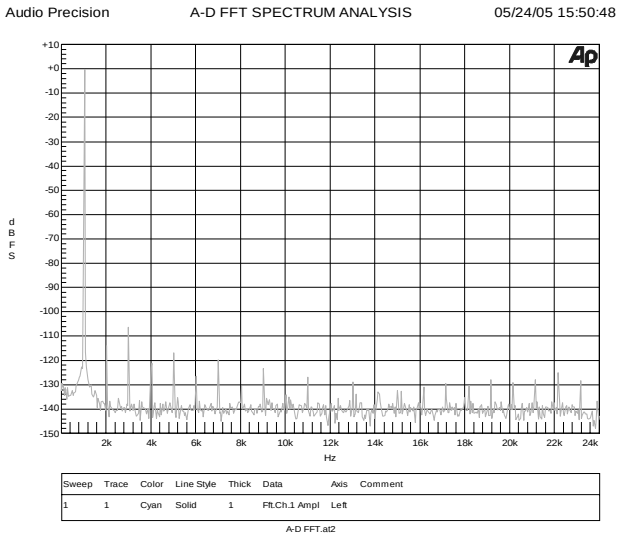


**Figure 5 – RCA Input, 0dBFS@1kHz**

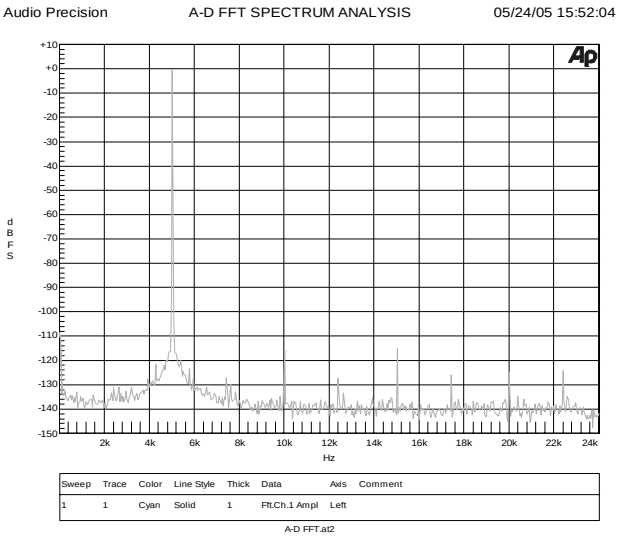


**Figure 6 – RCA Input, 0dBFS@5kHz**

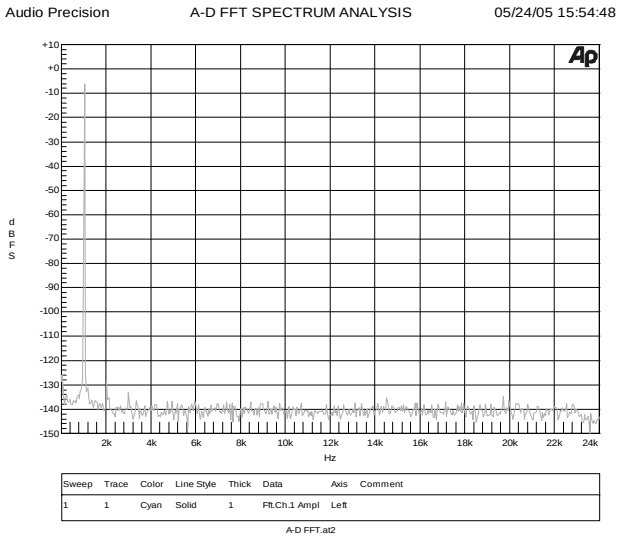


**Figure 7 – RCA Input, -6dBFS@1kHz**

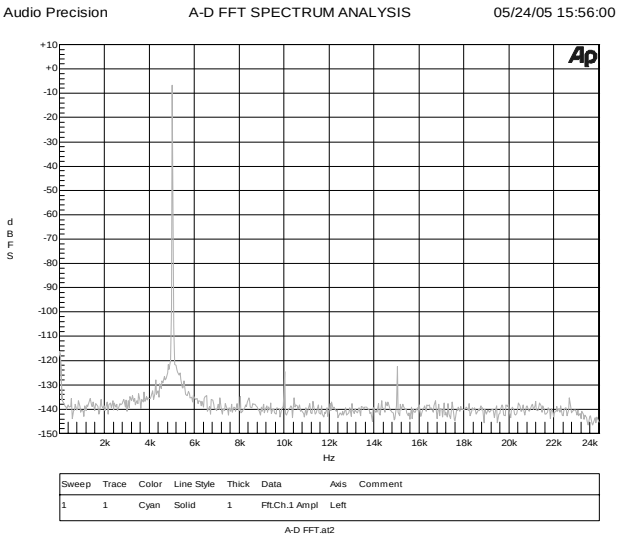


**Figure 8 – RCA Input, -6dBFS@5kHz**

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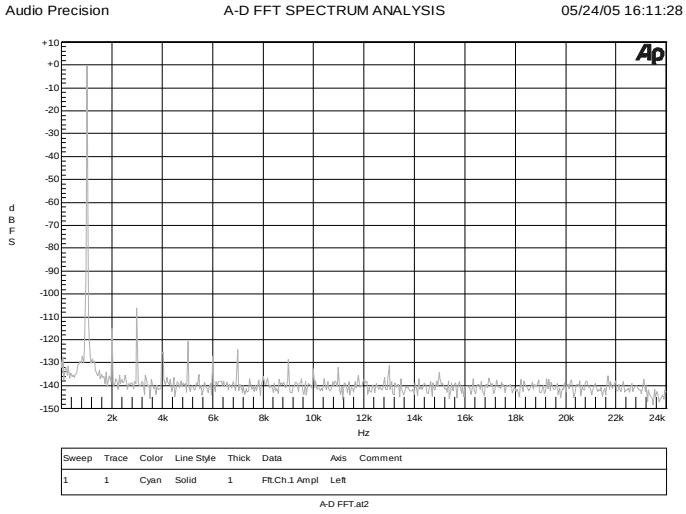


**Figure 9 – XLR Input, 0dBFS@1kHz**

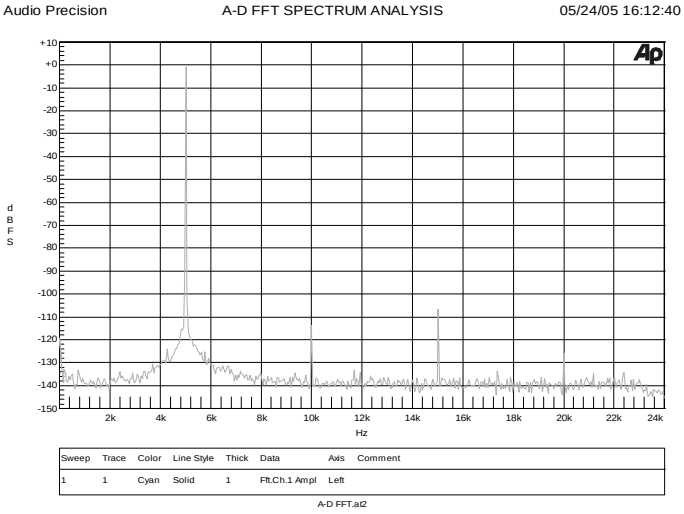


**Figure 10 – XLR Input, 0dBFS@5kHz**

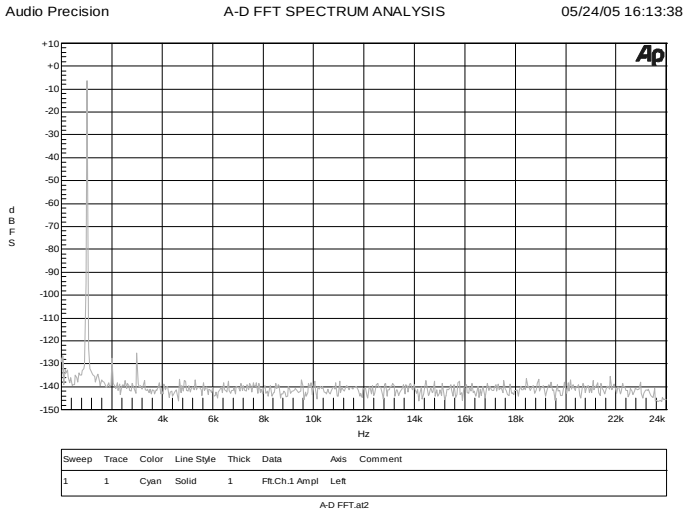


**Figure 11 – XLR Input, -6dBFS@1kHz**

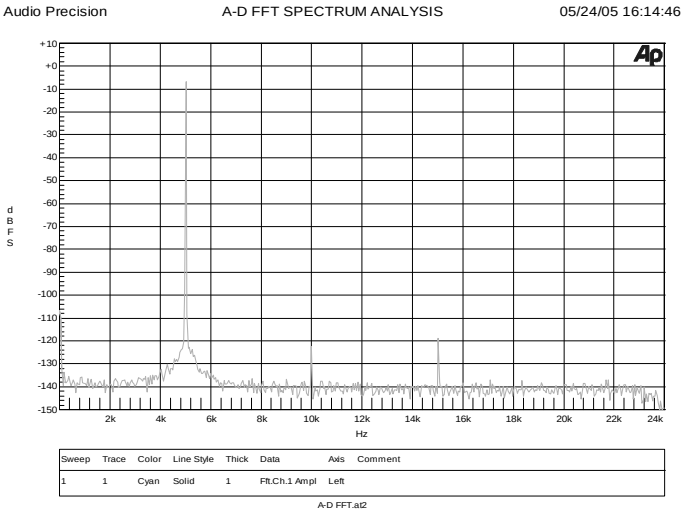


**Figure 12 – XLR Input, -6dBFS@5kHz**

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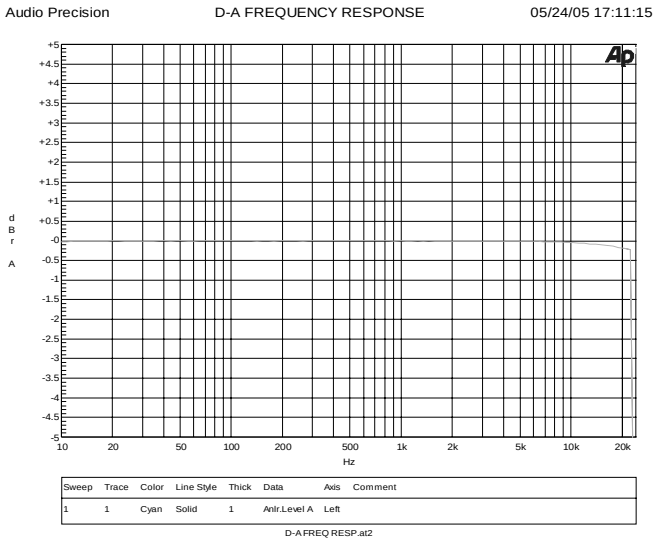


**Figure 13 – RCA Output Frequency Response**

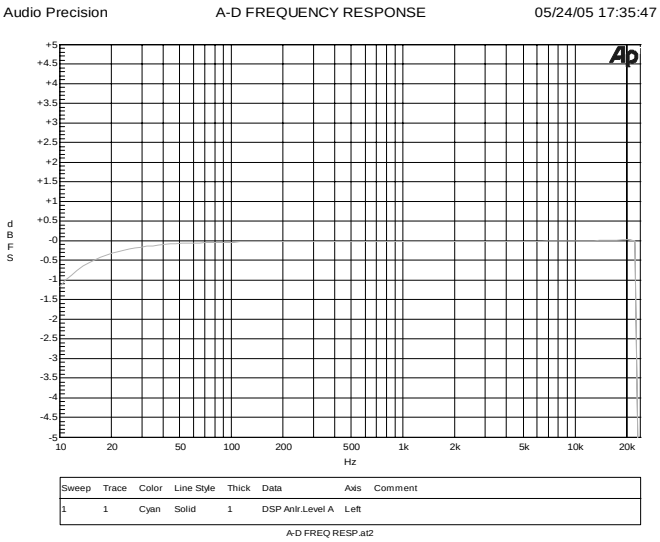


**Figure 14 – RCA Input Frequency Response**

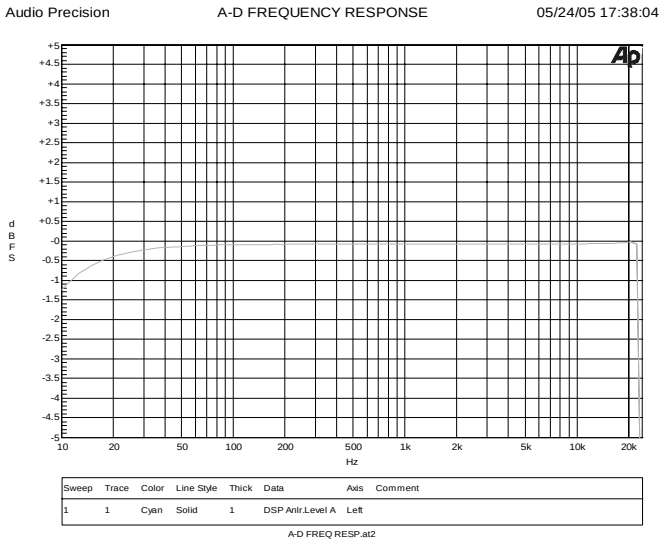


**Figure 15 – XLR Input Frequency Response**

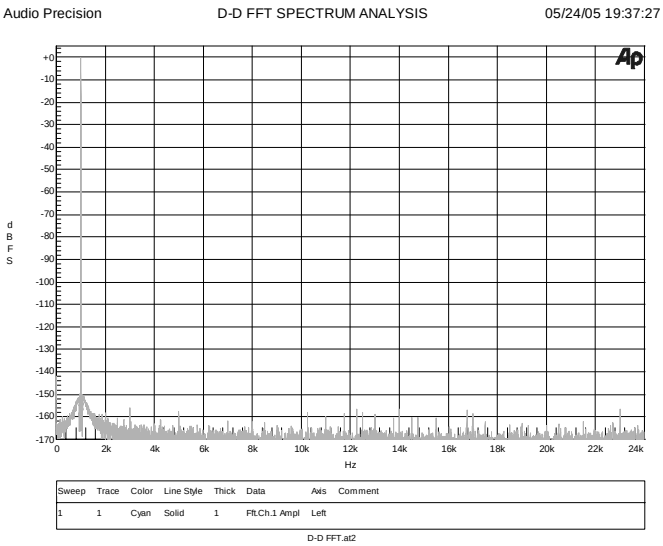


**Figure 16 – Digital Input to Digital Output 1kHz**

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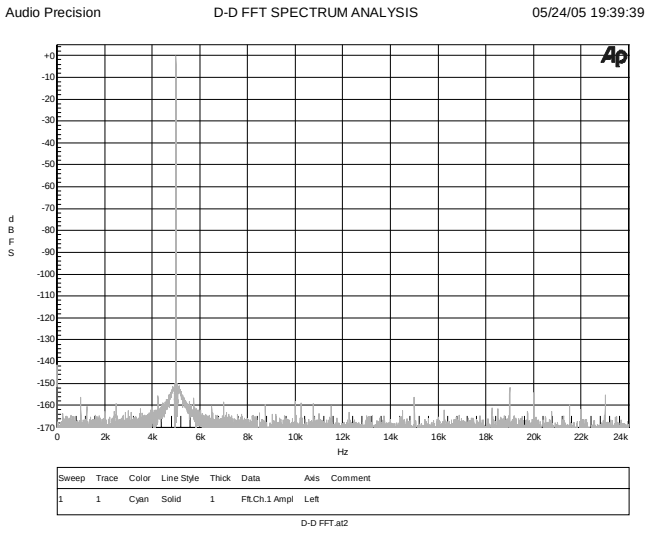


**Figure 17 - Digital Input to Digital Ouput 5kHz**

*Specification Subject to Change*