Application Note 1B
CD and DVD Testing
for Audio Precision APWIN

Addendum to
Application Note #1A

Published by:

Printed in the United States of America

Introduction

There have been significant improvements to the Compact Disc Player Tests since Application Note #1A was produced:

- The procedures have been enhanced to support System Two Cascade.

- Support has been added for three new DVD discs, described below.

- Support has been added for 96 kHz sample rate.

- Procedure code now provides better support for external sweeps:

  - Sweeps start to allow data collection even when the start value is not satisfied.

  - Sweeps stop (time out) even when the end value is not satisfied.

- Some menus have been enhanced.

The following subsections describe the new discs that are supported, and the tests that can be run from each.

CD Tests using Dolby DVD-TEST1

Dolby DVD-TEST1
Demo and Test Disc

NOTE:

This disc is no longer available from Dolby.

Track	Test No.	Description
28	1	Maximum Level -20 dBFS Levels and difference. Also displays bar graphs of levels.
19	2	Frequency Response - Single Tone. 59 tone level measurement.
19	9	THD+N vs. Frequency 20 dB below full scale. Total Harmonic Distortion and Noise 22 Hz to 20 kHz
7–9	10	THD+N residual FFT. Very high resolution of distortion and noise components.
24	13	Low-Level Linearity. Uses "Fade-to-Noise" track.
14	14	Dynamic Range in dB relative to 0 dBFS. Measures THD+N below -60 dB tone and computes result.
*	15	FFT for Dynamic range, Quantization Noise and IMD tests. High resolution display of distortion and noise components.
26 27	21	Separation/Crosstalk ref. 0 dBFS L to R. Uses track tones out of order for measurement R to L.

* *May use any desired track.*

CD Tests using Dolby Manufacturing DVD

Picture not available. This information is based on preliminary data. This disc is not yet available from Dolby.

Track	Test No.	Description
6	1	Levels and difference maximum Level 0 dBFS . Also displays bar graphs of levels.
13	2	Frequency Response - Single Tone. 26 tone level measurement.
17	5	Single number Signal-to-Noise ratio. "Infinity Zero" track - level measured relative to 0 dBFS.
17	6	Noise Spectrum FFT - to 80 kHz - requires DSP. High sample rate FFT of the "Infinity Zero" track.
14	9	THD+N vs. Frequency -20 dBFS. Total Harmonic Distortion and Noise 22 Hz to 20 kHz.
20	13	Low-Level Linearity. Uses "Fade-to-Noise" track
7	14	Dynamic Range in dB relative to 0 dBFS. Measures THD+N below -60 dB tone and computes result.
*	15	FFT for Dynamic range, Quantization Noise and IMD tests. High resolution display of distortion and noise components.

* May use any desired track.

48 kHz CD Tests using JAS DVD
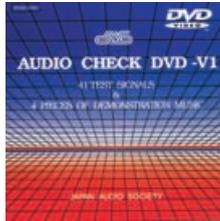
JAS Audio Check DVD-V1 Test Disc

✏️ *NOTE:*

This disc is available from Audio Precision.

Track	Test No.	Description
1.5	1	Maximum Level -20 dBFS Levels and difference. Also displays bar graphs of levels.
1.8–38	2	Frequency Response - Single Tone. 16 tone level measurement.
1.71	5	Single number Signal-to-Noise ratio. "Infinity Zero" track - level measured relative to 0 dBFS.
1.71	6	Noise Spectrum FFT - to 80 kHz - requires DSP. High sample rate FFT of the "Infinity Zero" track.
1.71	7	Noise spectrum Analog Bandpass sweep - to 200 kHz. Wider coverage than 7, poorer resolution. DSP not required.
1.71	8	Noise spectrum Analog Bandpass filter sweep. To 20 kHz. DSP not required.
1.8–38	9	THD+N vs Frequency 20 dB below full scale. Total Harmonic Distortion and Noise. 22 Hz to 20 kHz.
1.8–38	10	THD+N residual FFT. Very high resolution of distortion and noise components.
1.70	14	Dynamic Range in dB relative to 0 dBFS. Measures THD+N below -60 dB tone and computes result.
*	15	FFT for Dynamic range, Quantization Noise and IMD tests. High resolution display of distortion and noise components.
1.8–38	20	Interchannel Relative Phase - glide tone source. High resolution display of interchannel phase.
1.38	22	Frequency Accuracy - Measures difference in %. 19,997 Hz relative to System Two reference.

* May use any desired track.

96 kHz CD Tests using JAS DVD

Track	Test No.	Description
2.3	1	Maximum Level -20 dBFS Levels and difference. Also displays bar graphs of levels.
2.8–23	2	Frequency Response - Single Tone. 16 tone level measurement.
2.4	3	High Resolution Frequency Response. Uses glide tone for many closely spaced measurements.
2.4	4	Frequency Response and Interchannel; Phase. Uses goide tone sweep and measures relative phase.
2.25	5	Single number Signal-to-Noise ratio. "Infinity Zero" track - level measured relative to 0 dBFS.
2.25	6	Noise Spectrum FFT - to 80 kHz - requires DSP. High sample rate FFT of the "Infinity Zero" track.
2.25	7	Noise spectrum Analog Bandpass sweep - to 200 kHz. Wider coverage than 7, poorer resolution. DSP not required.
2.25	8	Noise spectrum Analog Bandpass filter sweep. To 20 kHz. DSP not required.
2.8–23	9	THD+N vs Frequency 20 dB below full scale. Total Harmonic Distortion and Noise. 22 Hz to 20 kHz.
2.8–23	10	THD+N residual FFT. Very high resolution of distortion and noise components.
2.24	14	Dynamic Range in dB relative to 0 dBFS. Measures THD+N below -60 dB tone and computes result.
*	15	FFT for Dynamic range, Quantization Noise and IMD tests. High resolution display of distortion and noise components.
2.28–23	20	Interchannel Relative Phase - glide tone source. High resolution display of interchannel phase.
2.20	22	Frequency Accuracy - Measures difference in %. 19,997 Hz relative to System Two reference.

* *May use any desired track.*

How to Run the CD & DVD Test Procedures

1. Copy the contents of the accompanying file from diskette or CD into a new folder in your APWIN directory.

2. Refer to Application Note 1A for specific information regarding APWIN configuration and connection considerations.

3. Set the working directory to the new folder defined in Step 1.

4. Individual procedures are supplied for each measurement or you can run a menu that allows you to select which tests to run. To run the menu, open and run the CDTEST.apb procedure:

   A. Click File > Open > Procedure

   B. Choose CDTEST.apb

   C. Select RUN under the Procedure menu

Refer to Application Note 1A for information on the individual tests.