

SOUND & VISION®

from test report on the Harman Kardon AVR 330 A/V receiver in the February/March 2004 **S&V**. Copyright © 2003 by Hachette Filipacchi Media U.S., Inc. All rights reserved.

in the lab for Web

DOLBY DIGITAL PERFORMANCE

All data were obtained from various test DVDs using 16-bit dithered test signals, which set limits on measured distortion and noise performance. Reference input level is -20 dBFS, and reference output is 1 watt into 8 ohms. Volume setting for reference level was -8. All level trims were at zero; all speakers were set to "large," subwoofer on. All are worst-case figures where applicable.

Output at clipping (1 kHz into 8/4 ohms)
1 channel driven.....95/148 W (19.8/21.7 dBW)
5 channels driven (8 ohms).....66 W (18.2 dBW)

Distortion at 1 watt (THD+N, 1 kHz)
8/4 ohms.....0.03/0.03%

Noise level (A-wtd)-75.1 dB

Excess noise (with sine tone)
16-bit (EN16).....+0.4 dB

Frequency response
20 Hz to 20 kHz +0, -0.3 dB

PCM STEREO PERFORMANCE

Reference level is -20 dBFS; all level trims at zero. Volume setting for reference level was -8.

Output at clipping (1 kHz, 8/4 ohms, both channels driven).....86/25 W (19.3/13.9 dBW)

Distortion at reference level0.03%

Linearity error (at -90 dBFS)0 dB

Noise level (A-wtd)-74.4 dB
(with 96-kHz/24-bit signals, -99.3 dB)

Excess noise (with/without sine tone)
16-bit (EN16).....1.1/1.3 dB
quasi-20-bit (EN20).....13.7/13.5 dB

Noise modulation0.8 dB

Frequency response
20 Hz to 20 kHz +0, -0.4 dB (with 96-kHz/24-bit signals, 8 Hz to 43 kHz, +0, -3 dB)

MULTICHANNEL PERFORMANCE, ANALOG INPUT

Reference input and output level is 200 mV; volume setting for reference output level was -6.

Distortion (THD+N, 1 kHz, 8 ohms)0.04%

Noise level (A-wtd)-85.4 dB

Frequency response
<10 Hz to 72 kHz +0, -1 dB (-3 dB at 156 kHz)

BASS-MANAGEMENT PERFORMANCE

Measured results obtained with Dolby Digital test signals.

Subwoofer-output frequency response (crossover set to 80 Hz)
24 dB/octave above -6-dB rolloff point of 100 Hz (-3 dB at 81 Hz)

High-pass-filter frequency response (crossover set to 80 Hz)
12 dB/octave below -3-dB rolloff point of 81 Hz

Maximum unclipped subwoofer output (trim at 0)9.2 volts

Subwoofer distortion (from 6-channel, 30-Hz, 0-dBFS signal; subwoofer trim set to 0).....0.08%

Harman Kardon's AVR 330 yielded several star-quality test-bench results. Its stereo digital-to-analog linearity was perfect, and noise was very low in all cases, even nearing the magic -100-dB point for 96-kHz/24-bit stereo signals. It also provided unusually strong subwoofer output (more than 9 volts), so driving any powered sub with an ample undistorted signal will be no problem.

The AVR 330 handily exceeded its rated all-channels power with five channels driven and was only a couple of watts shy of the 55 W x 5 spec even with all seven outputs active. When driving multichannel 4-ohm loads with steady-state test signals (sine tones), the receiver activated its protection modes after about half a

second if it was asked to produce more than about 25 watts. Single-channel performance was unaffected, and real-world dynamic signals presented no problem with these low-impedance loads.

Bass management was very consistent, with no changes in crossover or rolloff slopes for different inputs or media. However, no bass management is provided for the multichannel analog input — meaning none for DVD-Audio discs or Super Audio CDs — and bass management is defeated for any analog stereo source when the DSP Surr. Off stereo mode is selected. All channels can be set to "small," and speaker-distance compensation is available for all channels except subwoofer. — D.K.