

SOUND & VISION®

from test report on the Marantz SR5400 A/V receiver in the January 2004 **S&V**.
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in the lab

DOLBY DIGITAL PERFORMANCE

All data were obtained from various test DVDs using 16-bit test signals containing dither, 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 -7. All level trims were at zero, all speakers set to "large," subwoofer on. All are worst-case figures where applicable.

Output at clipping

(1 kHz into 8/4 ohms; see notes)
1 channel driven.....171/175 W (22.3/22.4 dBW)
5 channels driven (8 ohms).....103 W (20.1 dBW)

Distortion at 1 watt (THD+N, 1 kHz)

8/4 ohms0.03/0.04%

Noise level (A-wtd)-73.9 dB

Excess noise (with sine tone)

16-bit (EN16).....+2 dB

Frequency response

20 Hz to 20 kHz +0, -0.7 dB

MULTICHANNEL PERFORMANCE, ANALOG INPUT

Reference input and output level is 200 mV; volume setting for reference output level was -2.

Distortion (THD+N, 1 kHz, 8 ohms)0.03%

Noise level (A-wtd)-80.3 dB

Frequency response

<10 Hz to 51 kHz +0, -1 dB (-3 dB at 90 kHz)

PCM STEREO PERFORMANCE

Reference level is -20 dBFS; all level trims at zero. Volume setting for reference level was -3.

The Marantz SR5400 produced consistently fine lab results. When asked to produce more than about 150 watts while driving 4-ohm loads with steady-state test signals (sine tones), it activated its protection modes after about 1 second, severely limiting its output and then quickly shutting down regardless of the number of channels driven. Dynamic signals, however, appeared to present no problem with lower-impedance loads. Even taking this protective response into account, it delivered impressive power all around, exceeding its 90-watt rating even with all six channels driven.

No bass management is provided for the multichannel analog input, but it was otherwise

Output at clipping

(1 kHz, 8/4 ohms, both channels driven; see notes)146/150 W (21.6/21.8 dBW)

Distortion at reference level0.03%

Linearity error (at -90 dBFS)0.1 dB

Noise level (A-wtd)-74.4 dB

96-kHz/24-bit signals-89.1 dB

Excess noise (with/without signal)

16-bit (EN16).....+1.2/+1.2 dB

quasi-20-bit (EN20).....+14.6/+14.6 dB

Noise modulation1.1 dB

Frequency response

10 Hz to 20 kHz +0, -0.4 dB

96-kHz/24-bit signals.....8 Hz to 36 kHz +0, -3 dB
(-35 dB at 44 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 81 Hz

High-pass-filter frequency response

(crossover set to 80 Hz)

12 dB/octave below -3-dB rolloff point of 80 Hz

Maximum unclipped subwoofer output

(at reference volume setting; subwoofer trim set to 0)7.8 volts

Subwoofer distortion (from 6-channel, 30-Hz, 0-dBFS signal; subwoofer trim set to 0).....0.03%

consistent with changes in source or media, such as between DVD and broadcast TV or stereo CDs and multichannel DVDs. All channels could be set to "small," and speaker-distance compensation was available for all channels, including subwoofer.

Real-world noise was within a decibel or so of the theoretical ideal with our dithered test tracks, and the SR5400 was quieter still with 96-kHz/24-bit signals. I found one slight anomaly with 96/24 performance: the receiver's response rolled off at 35 kHz, a third of an octave or so before the 48-kHz possible limit. This is unlikely to be a problem unless you're a bat, or possibly a vampire. — D.K.