DANIEL KUMIN

Harman Kardon

AVR 7300 Digital Surround Receiver

At first glance, Harman Kardon's AVR 7300, the latest flagship receiver from the venerable American brand, looks little different from its predecessors. And in a lot of ways, it *is* the same. After all, big power, extensive signal-routing, powerful setup flexibility, and an attractively restrained, black-and-silver aesthetic were hallmarks of several previous Harman Kardon flagships, and the AVR 7300 has them, too. But a bit of digging quickly revealed some significant changes.

First, the AVR 7300 piles on Dolby Pro Logic IIx (DPL IIx), Dolby's latest, 6.1/7.1-channel version of its surround processing for two- and four-channel sources. (DPL IIx derives back surround channels from both Dolby Surround-encoded and plain stereo sources, with impressive results.) Second, the receiver incorporates not just ample video switching (including *three* component-video inputs), but video *processing* as well by an onboard Faroudja DCDi engine. Otherwise, the AVR 7300 is everything I'd expect in a flagship receiver, and that's a lot.

SETUP The "key features" list on the facing page hits the high spots, but a few demand more attention, like EZSet, which uses a test microphone in the remote control to balance channel levels automatically. It worked smoothly, with very accurate results, as long as the receiver and the remote were more or less in line — the remote needs to "see" the receiver to communicate via infrared throughout the process.

More valuable in my book was the receiver's unusually complete configurability. You can set the crossover frequency independently for each speaker or channel pair, with seven choices between 40 and 200 Hz — and you can dial in a different set of frequencies for each input, too. (In fact, you *must* do so, or at least copy your setup for each input you'll use. It's a bit of a chore at setup time, but you only need to do it once.) Most other options can also be set individually for each input, including surround mode, tone settings, and channel levels.

But the AVR 7300's most newsworthy feature — Faroudja DCDi video processing — is also among its subtlest. The headline here is the ability to "upscale" 480i (interlaced) video, like standard-definition broadcast TV, to 480p (progressive-scan) format, like the output of a progressive-scan DVD player. All of my video sources — my universal DVD player, my TiVo/DVD recorder, and my Comcast high-def cable box — can do the same already, and this is likely to be the case in a lot of up-to-date systems. But the AVR 7300 lets you assign video-setup modes individually for each input — not only DCDi deinterlacing but also settings for video noise reduction, brightness, contrast, saturation, display format (4:3 or 16:9), and so on.

fast facts

RATED POWER 110 W x 7 into 8 ohms with maximum 0.05% THD (channels driven individually)
DIMENSIONS (WxHxD) 17⅜ x 7⅝ x 20½ inches
WEIGHT 55 pounds
PRICE $2,399
MANUFACTURER Harman Kardon, harmankardon.com, 516-255-4545

PHOTOS BY TONY CORDOZA

key features

- Dolby Digital EX and DTS-ES 6.1-channel decoding
- Dolby Pro Logic IIx, Logic7, and DTS Neo:6 processing for 5.1/6.1/7.1-channel playback from 2-channel or matrixed 4-channel sources
- EZSet auto level setup
- Many setup options can be saved for each input
- Faroudja DCDi video processing with 480p upconversion and enhancements calibrated by input
- 2 Hall modes, Dolby Virtual Surround and Headphone Surround, proprietary virtual surround
- 3 assignable HDTV-compatible component-video inputs, 1 output with upconversion and onscreen display
- 6 A/V inputs, 4 outputs, all with S-video (1 input and 1 output on front panel)
- 4 optical, 4 coaxial assignable digital audio inputs (1 each on front panel); 2 optical, 2 coaxial digital outputs (1 each on front panel)
- 2 stereo audio-only inputs, 1 record output
- 8-channel analog audio input with bass management; DPL IIx can create back surround channel
- 96-kHz/24-bit digital-to-analog converters on all channels
- MP3 and HDCD decoding
- Preamp outputs for all channels
- 8-component preprogrammed/learning system remote; can store 2 macros (up to 10 steps)
- AM/FM tuner with 56 presets
- Zone 2 composite/S-video output with line-level stereo (or back surround channels can be redirected); independent source selection, volume control via simplified remote (supplied)
- Dual A-BUS multiroom outputs
- 12-volt trigger output; IR-control input and output; RS-232 serial port

In my case, standard-def images from the Comcast Motorola digital-cable box looked a bit sharper and more solid using the receiver's processing, while the TiVo box and DVD player were tossups. However, another, cheaper progressive-scan DVD player clearly benefited from the processing.

This is not a simple feature, but it is a powerful and potentially beneficial one, particularly for systems with older sources like a VCR or laserdisc player. And one big fringe benefit of the AVR 7300's video processing *is* simple and universally useful: it not only upscales both composite- and S-video sources to component video, but it also sends all onscreen menus and displays to the component output (as well as the others). That lets you make just one connection to your TV, vastly simplifying not only setup but everyday use. Unfortunately, the onscreen displays don't show up when the incoming material is 480p or higher.

MOVIE PERFORMANCE The AVR 7300 displayed really impressive power and dynamics in all playback modes. It met all the challenges of HBO's technically superb DVD set of the WWII series *Band of Brothers*. For example, the extended firefight that fills much of Part 5 (*Crossroads*) includes just about every possible surround effect relating to gunfire, explosives, rumbling machinery, distant, echoing detonations, and running, shouting men — all of them meticulously produced for realism and impact. Surely the Harman Kardon can take some credit for my finding this sequence as harrowing the tenth time through as the first.

Through all six episodes of the series, the AVR 7300 gave no hint of dynamic sacrifice regardless of volume setting. In fact, it had enough power to ace all of my movie-soundtrack torture tests, including explosions, crashes, and musical scores played as loud as in a movie theater. In every case, the sound was clean, dynamic, and elegantly defined.

MUSIC PERFORMANCE Music playback through the HK receiver met the same high standard, with power to spare for even the most demanding multichannel Super Audio CD or DVD-Audio disc. The AVR 7300 delivers fully flexible bass management for its multichannel analog input. It can also superimpose DPL IIx processing on signals received through this input, creating a back surround channel from the discrete left and right surround channels in your SACD and DVD-A recordings.

The effect on pristine recordings, like the SACD of Norah Jones's *Come Away with Me*, was to make the ambience more seamless and enveloping. On others, the added back surround channel emphasized any centered soloist, pulling him or her slightly toward the listener. Being able to fine-tune bass management for SACDs and DVD-As, and to apply DPL IIx processing to them, are real luxuries, and we've rarely seen them both on a receiver.

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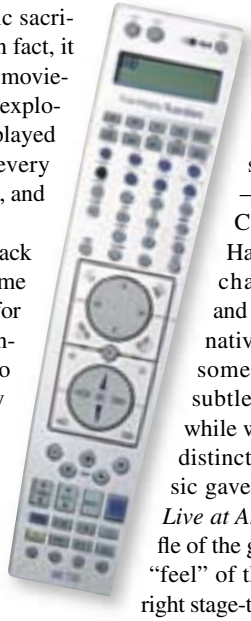

For the rest of your music library, the AVR 7300 offers a pair of decent-sounding Hall modes, Logic7, Dolby DPL IIx, and the similar DTS Neo:6. Logic7 — in three modes: Music, Cinema, and Enhance — is Harman's proprietary 6.1/7.1-channel processing system, and it offers an interesting alternative to the Dolby flavor. With some music the difference was subtle and difficult to pin down, while with other things it was quite distinct. For example, Logic7/Music gave "Midnight Creeper" (from *Live at Antone's*), the signature shuffle of the great James Cotton, the wide "feel" of the club space, with just the right stage-to-crowd perspective for truly engaging, foot-stomping fun. On the other hand, a favorite disc of the Debussy and Ravel string quartets sounded more lifelike with DPL IIx. The good news is that the AVR 7300 lets you select one or the other at the touch of a button.

OPERATION The slim, silvery remote con-

PLUS

Flagship performance.
Faroudja DCDi video processing.
Composite/S-video inputs upconverted to component-video.
Bass management and synthesized back surround channel for SACDs and DVD-Audio discs.

MINUS

Complex remote control.
Audible cooling fan.

trol is elegant to look at and sensibly laid out, but its small keys and tiny lettering made it difficult to use even with the backlighting on. (And you need two hands to push the Light key way down in one corner.) The pair of big, four-way keypads — one for volume and channel selection, and the other for cursor directions — look enough alike to be confusing, though telling them apart by touch is easy.

On the plus side, a single key on the remote (and the front panel) is dedicated to each major "family" of surround modes — like Dolby, DTS, and Logic7 — and you step through the variants in each family by pressing the same button again. Unfortunately, the remote's library of preprogrammed control codes didn't include either my cable box or my DVD recorder, neither of which is particularly exotic.

To my surprise, once the receiver had been on for 30 minutes or so, its automatic internal cooling fan ran much of the time regardless of the volume setting or actual power demands. Though the fan was by no means obnoxiously loud, I could hear it from my listening position during pauses and even over very soft musical passages. For serious listening I usually power down both my TiVo and my computer for just this reason, so maybe I'm overly sensitive. But powering down the receiver to quiet its fan isn't an option!

BOTTOM LINE Putting my relatively inconsequential gripes aside, the Harman Kardon AVR 7300 is one helluva digital surround receiver. If you want tremendous setup flexibility, top-drawer performance, truly superb surround options, and unusually customizable video outputs, it's one you really should check out. **S&V**

in the lab

DOLBY DIGITAL PERFORMANCE

Output at clipping (1 kHz into 8/4 ohms)
1 channel driven....202/343 W (23.1/25.3 dBW)
5 channels driven (8 ohms).....145 W (21.6 dBW)
7 channels driven (8 ohms).....139 W (21.4 dBW)

Distortion at 1 watt (THD+N, 1 kHz)
8/4 ohms.....0.03/0.04%

Noise level (A-wtd).....–75.0 dB

Excess noise (with sine tone)
16-bit (EN16).....+1.4 dB

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

MULTICHANNEL PERFORMANCE, ANALOG INPUT

Distortion (THD+N, 1 kHz, 8 ohms)....0.01/0.03%

Noise level (A-wtd).....–83.1 dB

Frequency response
below 10 Hz to 166 kHz +0, –3 dB

BASS-MANAGEMENT PERFORMANCE

Subwoofer-output frequency response
(crossover set to 80 Hz)
12 dB/octave above –3-dB rolloff point of 74 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).....6.5 volts

Subwoofer-output distortion (from 6-channel, 30-Hz, 0-dBFS signal; trim at 0).....0.05%

The AVR 7300 performed exceptionally well in the lab. Power output was unusually strong, especially with five and seven channels driven. Crossover response was generally consistent, but the 12-dB-per-octave low-pass subwoofer output was a little unusual — steeper, 18- or 24-dB-per-octave slopes are more common. Noise performance ranged from good (multichannel analog) to excellent (Dolby Digital and CD stereo) except for 96-kHz/24-bit stereo (all stereo figures omitted for space — for complete lab data, see our Web site). The AVR 7300 was actually a shade noisier with those signals than with standard CDs. Since the receiver performed well with 96/24 signals in all other respects, I suspect this was its digital-to-analog converters misresponding to our dither-only test signal rather than a "real" noise problem.

The receiver handled all sources and media types consistently except for slight changes (a few hertz) in the –3-dB points with analog inputs. Bass management was provided for all media, including digital stereo and multichannel analog (defeatable with the Direct mode), all channels can be set to "small," and speaker-distance compensation is available for all main channels and all inputs. — *D.K.*