



“ ... sound of the very highest order ... irresistible. ”

SOUND & VISION
HOME THEATER • AUDIO • VIDEO • MULTIMEDIA • MOVIES • MUSIC

BY DANIEL KUMIN

PREAMP PLEASURES

Having been bitten by the home theater bug, you've gone from a shelf system to a home theater in a box to an A/V receiver. So what's left? High-end separates, that's what. Dividing a receiver's primary parts into discrete components isn't a new idea — there were separate preamplifiers, power amplifiers, and radio tuners before the all-in-one receiver was even invented more than 50 years ago, but digital home theater has brought forth a new variant, the preamp/processor/tuner, which is essentially a top-shelf A/V receiver without the five, six, or seven power-amp channels built in.

So why would you want to forsake the convenience of a single box for separates?

- 1) Segregating the power amps from the preamp/processor circuitry minimizes the possibility of electromagnetic interference from the amps' high voltages and current and their strong magnetic fields.
- 2) Size: combining sophisticated preamp functions with high-powered seven-channel amps makes for some mondo-big boxes—as you can see by looking at just about any recent flagship receiver.

- 3) Flexibility: considering how quickly and often technologies are introduced and evolve nowadays, it's probably not a bad idea to have a preamp you can upgrade or swap out while hanging onto the power amp.
- 4) Not to put too fine a point on it: snob appeal. High-end amps and preamps usually come with stylish design and indestructible construction, and they look more elegant sitting on your shelf than a hulking receiver.

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All [preamps in this review] demonstrated tremendously refined performance in all of the fundamental surround sound tasks. Mated to capable amplification and a fine suite of speakers, each of these components stands ready to deliver multichannel sound of the very highest order.

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ANTHEM AVM 20

A product of Canada’s Sonic Frontiers, the AVM 20 has everything you’d expect from a digital surround processor—plus some things you might not, like *two* audio/video remote-zone outputs in addition to its “main” multichannel room. This makes it a very capable multiroom controller. It is also one of the most configurable, personalizable, and tweakable preamps to come down the pike.

Visually, the AVM 20 is restrained, unspectacularly finished in basic black. The net effect is all business. The front panel is adorned with 40-odd pushbuttons and a single knob, which functions as both the master volume control and an “alpha wheel” to scroll through selections and parameter values, depending on the button you push. Operation is a bit cryptic at first, but logical once you crack the code. Fortunately, Anthem’s manual is clear and complete, verging on the encyclopedic.

The AVM 20’s back panel features a packed house of jacks. The first thing you’ll notice are the 13 balanced-line XLR jacks. (Balanced line connection, which requires a bit more complexity in the input and output circuits, uses three wires instead of two, making it less susceptible to noise, especially over long cable runs.) These include an eight-channel main

output, paralleled by conventional RCA jacks, plus extra center and subwoofer outputs that can double as balanced outputs for Zone 2 multiroom use, as well as a balanced-line analog stereo input, which could be used for a high-end CD player, phono preamp (the AVM 20 doesn’t have a phono input), or other analog source. The 13th XLR jack is an AES/EBU digital input—a pro-audio format used on a few high-end CD transports.

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Late in my sojourn with the AVM 20, Anthem passed along an operating-system upgrade that added the latest THX modes—Ultra2 Cinema and MusicMode—as well as Dolby Pro Logic II (DPL II) and a proprietary 6.1/7.1-channel mode it calls AnthemLogic.

The primary setup routines were fairly straightforward. You can set each input to either Analog-Direct, where the Anthem acts like a “purist” analog preamp (stereo except for the multichannel analog input); Digital, for incoming bitstreams from any source; or Analog-DSP, which converts analog audio to digital for processing.

And note that the AVM 20 also lets you set its *multichannel* analog input to Analog-DSP mode, which uses 24-bit/96-kHz analog-to-digital (A/D) converters to translate analog signals from multichannel Super-Audio CD and DVD-Audio players to digital. This lets you take advantage of the preamp’s digital-domain bass management. True, converting and reconverting high-resolution multichannel audio doesn’t seem to make much sense on the face of things, but at least you get the chance to experiment with bass management on these sources—you can always reset the multichannel input to Analog-Direct, sacrificing bass management, if you prefer.



The AVM 20's speaker configuration menu also includes a number of unusual options. A "Sm Dipole" setting lets you eliminate the delay for the surround channels invoked by the typical Speaker Distances menu (Anthem's included). The manual suggests that dipoles don't require this additional "Hall Effect" delay since "sound reproduced by dipoles is already in the reverberant domain acoustically"—an interesting thought.

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Equally uncommon is the "Center EQ" option, which is meant to compensate for the response changes caused by the "baffle effect" experienced when the center speaker is placed atop a large-screen TV's acoustically reflective screen. It even offers five "size" settings to adjust the compensation for screens ranging from 18 to 78 inches (diagonal). Then there's the Advanced Settings menu, which lets you set subwoofer crossover frequencies between 25 and 160 Hz for each channel /pair. You can also tweak subwoofer phase continuously or invert it.

We're just getting started—this is geek heaven! The Source EQ menu lets you tailor the response of individual inputs, independently of the bass and treble controls. Other menus let you set the formats of the digital outputs, rename the source inputs, and use the six independent timers (two per zone) to automate various tasks. Then there's the Audio Group Delay menu, which lets you set a delay for all audio channels relative to the video to eliminate lip-sync errors caused by an outboard video processor like a line doubler.

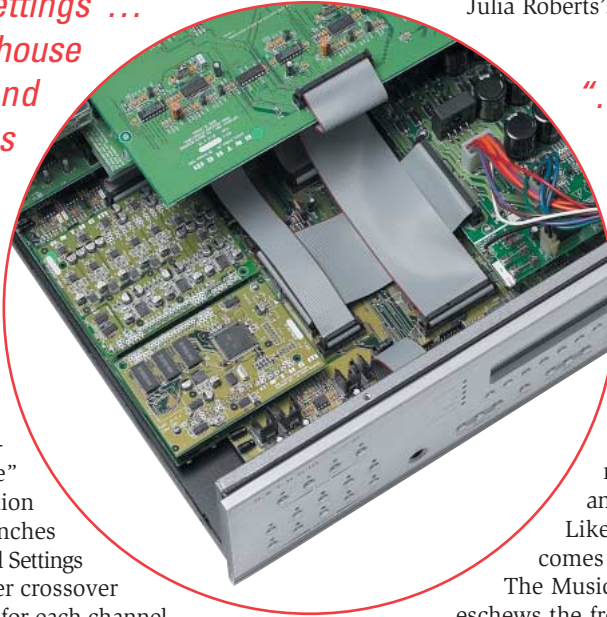
There's probably something the AVM 20 can't do, but I never stumbled across it. Of course, all this customizability makes for a certain amount of complexity, though most of the more arcane options are well concealed in the menus. Speaking of the menus: they're logically arranged and, for the most part, sensibly chosen—but there are *a lot* of them.

How did it sound? In a word, great. I surfed *The Spy Who Shagged Me* and several other Dolby Digital EX and DTS-ES titles looking for scenes that showcased the THX Ultra2 Cinema mode, but frankly, I didn't hear much difference between it and "regular" THX Surround EX decoding. I'm not passing judgment based on this trial, though. It might well be

that my room is too small, with the left/right and back surround speakers too closely bunched, to get the full benefit from the Cinema mode.

There's no question that the Anthem is a top-shelf performer. One rapid-fire sequence in the recent remake of *Ocean's Eleven* cuts between street scenes, jingling casinos, plush hotel rooms, a roaring boxing arena, and more, with quiet dialogue on top of the interior and exterior ambience (though with a bizarrely erratic use of the surround channels). The AVM 20 reproduced all the subtle variations faultlessly, with superb low-level detail and impressive dialogue clarity and nuance, even on Julia Roberts's quietest whispers.

"... eminently usable ... one of the most configurable, personalizable, and tweakable pre-amps to come down the pike."



The Anthem proffers a raft of additional stereo and multichannel modes: the full DTS family, DPL II, and, in its upgraded state, AnthemLogic. Like Ultra2 and DPL II, AnthemLogic comes in both Music and Cinema variants.

The Music variant is a six-channel mode that eschews the front center speaker altogether, while the Cinema version uses it; both employ the back surround speakers for stereo and surround encoded materials alike. I was intrigued by what I heard. AnthemLogic's Music mode sounded even subtler than my personalized DPL II settings—I suspect it would make an excellent halfway house between "stereo" and "surround" for serious music recordings. The Cinema setting was also interesting, but probably no better than the DPL II Cinema mode I use for most of my TV/old-film viewing.

The AVM 20 might not win any prizes for its ergonomics, but it's eminently usable. The supplied remote is fairly easy to read, grok, and get around on. The Anthem's very depth works against it initially, but once you get everything programmed and tweaked to taste, it should be pleasant to live with. AM/FM tuner performance was about average, but perfectly adequate for talk radio, background music, and baseball.

I just plain loved the detailed level of control and calibration the AVM 20 makes available to us propeller-beanie types. For instance, it remembers the individual center, back surround, or subwoofer channel level tweaks you make by surround mode—including the ones for the multichannel analog input when it's set to Analog-DSP. You can even adjust each mode's LFE (low-frequency effects) channel level independently of its bass-managed, overall subwoofer channel-level.

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Clearly, Anthem’s AVM 20 is conceived with a more technical-minded buff in mind. But that’s not to say it’s an exclusionary design. You could set this preamp up and enjoy it while using nothing more than its on/off and source-select functions, and still make excellent use of its considerable abilities.

To a tweak like me, the Anthem AVM 20’s unmatched depth and configurability are irresistible.

IN THE LAB

DOLBY DIGITAL PERFORMANCE All data were obtained with the Dolby Labs and ‘Sound & Vision’ test DVDs using dithered test signals, which set limits on measured distortion and noise performance. Reference input level is -20 dBFS, and all tests were made with the master volume control set as indicated below. Except for subwoofer-related tests, all speakers were set to “large,” subwoofer on. All are worst-case figures where applicable.

ANTHEM AVM 20	
Reference volume setting (for 200-mV output from -20-dBFS input signal)	-2.0
Distortion (1 kHz, THD+N, 0 dBFS)	0.005%
Noise level (16-bit, signal, A-wtd)	-75.2 dB
Excess noise (16-bit, with sine tone)	+0.4 dB
Frequency response (20 Hz to 20 kHz)	+0.1, -0 dB
Subwoofer-output frequency response (rolloff above -6-dB point)	24 dB per octave above 79 Hz
High-pass-filter frequency response (rolloff below -3-dB point)	12 dB per octave below 80 Hz
Maximum unclipped subwoofer output (at reference volume setting)	8.8 volts
<i>Multichannel Performance, Analog Inputs Reference volume settings were the same as for Dolby Digital measurements. Results are typical, not necessarily worst-case.</i>	
Distortion (1 kHz at 200 mV)	0.05%
Noise level (A-wtd re 200 mV)	-84.4 dB
Frequency response	20 Hz to 130 kHz +0, -3 dB