



AVM 20

“... pure magic!”

## QUÉBEC•AUDIO

BY FRANÇOIS LEMIEUX

VOL. 8 • NO. 6

### A WORLD-CLASS FIRST!

***Sonic Frontiers International, a fairly recent addition to the Paradigm Group of Companies, has a well-established reputation in the field of very-high fidelity. Anthem, a division of Sonic Frontiers, specializes in lower-priced products targeted at a wider market that includes the home theater segment. Anthem's latest offering is the AVM 20 (Audio Video Master 20), a multizone preamp/processor/tuner with THX Ultra certification.***

First, let me tell you that when we received the AVM 20, I felt like a little boy on Christmas Day discovering his gifts under the tree. I didn't know where to start. After regaining my composure, I made a visual examination of the unit. What follows is a summary. The thick silver-coloured metal faceplate (also

available in Black as a no-charge option) is covered with forty or so identical push-buttons. They are grouped according to function, giving access to most of the processor functions and options, except those related to the timer. Right away you get a feeling of confidence as to the quality of the system. But what immediately grabs your attention is the large green digital display. It is a completely successful design. It can be read from a distance, displays all the important data, and brightness is easily adjusted. All functions can be accessed—and believe me there are a lot of them—without the use of the on-screen display (here is something that other manufacturers should also adopt). On the right side there is a large knob controlling the AVM 20's many functions. Surrounding

it, on a 90°-arc, are the buttons that allow setting adjustments for the various surround-sound channels.

The back of the unit bristles with an impressive array of all kinds of jacks. Among the gold-coloured RCA connectors, one can find analog and digital audio inputs and outputs (S/PDIF), video composites and components (Y/Pb/Pr) which are compatible with high-definition television (1080p). There are also seven S-Video inputs (Y/C) and five outputs of type, two of which are dedicated to video Zones 2 and 3. In addition to the aforementioned seven audio-digital inputs, one finds three optical inputs (Toslink) and one connector of the XLR type (AES/EBU). All the output signals are also available, in

balanced format, from XLR jacks, two of which are for the middle, center, rear and subwoofer channels. In addition, a balanced stereo input allows, as with the other analog inputs, bypassing of the tone controls, the digital signal processing (DSP) and the conversion circuits A/D, DSP and D/A, in order to minimize the degradation of the all-important musical signal. Audiophile purists will rejoice!

Imagine, there are also three 12-Volt trigger outputs, inputs and outputs for infrared transmitters and receivers, an operational RS-232 port (which, among other things, lets you update the internal software via the Internet) and a location reserved for a type IEEE 1394/PHAST interface. The main on/off switch and the detachable power cord complete the list. PHEW! I would be surprised if one type of connector were missing.

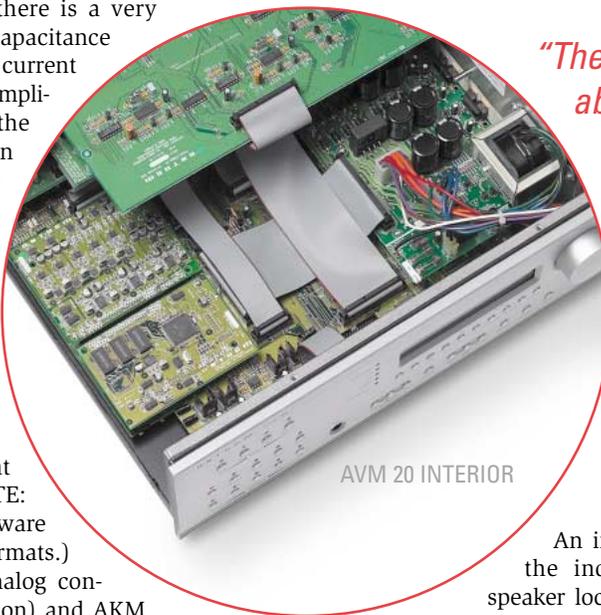
Taking a peek inside we notice there is a very large power supply, with a total capacitance of 80,000  $\mu$ F. It is more than most current receivers, which also include their amplification! The main transformer is the toroidal type and feeds about ten stages of voltage regulation. The AVM 20 utilizes state-of-the-art components in the digital processing circuits, including the new Motorola 56366 Digital DNA processor (ideal for the rendering of *Jurassic Park* dinosaurs), although, in its present form, it can't handle the Dolby Pro-Logic II nor the decoding of the DTS-ES 6.1 Discrete format. Granted that this last format is rather rare. (NOTE: Anthem will be releasing a hardware and software update for these formats.) There are also AKM Digital-to-Analog converters (at 24 bit/192 kHz resolution) and AKM Analog-to-Digital converters, the last ones used to digitize, if desired, the analog inputs with a resolution reaching 24 bits-96 kHz.

The universal remote can be programmed with the manufacturer's codes, or by learning from another unit. The remote features controls for various sources. Thanks to its slightly rubberized texture it affords a good grip. All buttons are illuminated with a blue light which can be turned on at the slightest touch of any button. A very important button is missing however: it is the one commonly called "macro" which can be programmed to control several pieces of equipment. At the price, the AVM 20 should have included this very useful function.

### FEATURES :

This processor has so many features that I will outline only the most important for home-theatre use. The AVM 20 is THX Ultra certified and can process the following formats: Dolby Digital, THX Surround EX, Dolby Pro Logic, DTS and DTS-ES matrix. Two THX modes are available. The first one, Home THX Cinema, activates the THX circuits designed for the re-equalization of the front channels, the timbre matching of

front and rear speakers and for the decorrelation of the rear speakers when the signal is monaural (e.g. Pro Logic). The second one, or THX Surround EX mode, is activated to produce the signal for the rear centre channel (hence 6 in 6.1). Even if there were two rear speakers to reproduce this signal, it would still be monaural. So we are dealing with a 6.1 configuration and not 7.1 as we hear so often). This mode works either in Dolby Digital or DTS-ES. But be aware that by selecting the Surround EX mode, both THX circuits described earlier are activated. Not being a follower of the THX philosophy, I would have much preferred being given the choice of applying or not applying these modifications to the original signal. I firmly believe that the producers of DVD movies should design the soundtrack to suit the home theatre environment, instead of counting on a circuit which will affect all recordings indiscriminately, that is if we want to enjoy the 6.1 mode.



AVM 20 INTERIOR

*"The AVM 20 is truly a remarkable processor. It decodes the most common audio-digital formats with amazing accuracy. Its multichannel surround-sound performance, musical quality and simple, intuitive operation make it a winner."*

An interesting feature of the AVM 20 is the independent tone control for each speaker location. It offers a more uniform frequency response, even when using different speakers. A specific tone equalization and an input level adjustment can also be accomplished for each of the audio inputs. Even the headphone amplifier has its own volume and tone controls.

The Anthem AVM 20 has another feature that allows for full bass management (crossovers, delay, tone controls and THX post-processing) of the 6-channel analog input, used to connect multichannel SACD or DVD-audio players. It's the first time that I've seen such a function on a processor, but I personally think that we have here an interim solution. These high-quality analog signals are being digitized at a lower resolution than the original recording, and in a different format, thereby eliminating the theoretical advantage of these new encoding processes. As we can see, the configuration possibilities of the AVM 20 are very impressive and strive for the highest quality audio playback.

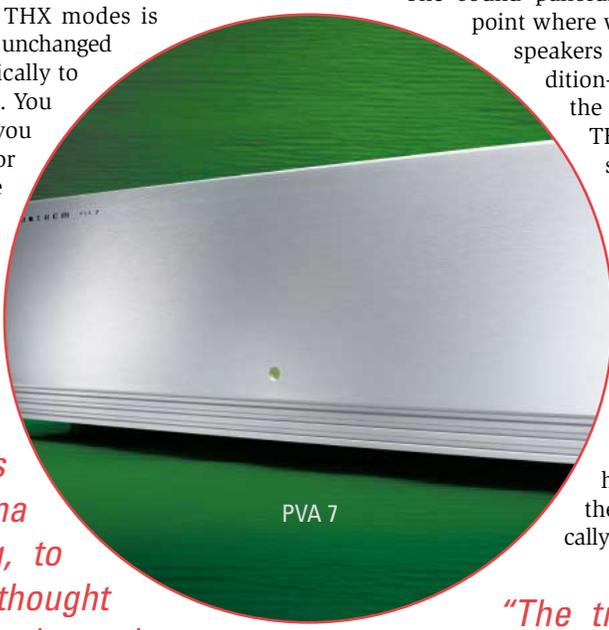
### CALIBRATION AND PLAYBACK:

Configuring the AVM 20 can be done in a few minutes, regardless of its high degree of sophistication. After a short while, the instruction manual is not really necessary. One can surf the various menus and sub-menus rather intuitively. One

could even swear that the Sonic Frontiers engineers have already done home installations! First you have to specify the type of speaker used on each channel. If you use special effects dipolar speakers, the menu will let you choose that particular configuration. You then select the frequency of the bass filter which is adjustable between 40 and 160 Hz (Yippee!). After a few trials, I settled on 60 Hz, with perfect results. Oddly enough, when one of the THX modes is chosen, the filter frequency remains unchanged instead of adjusting itself automatically to 80 Hz, which is the THX standard. You then enter the distance between you and each of the speakers in feet or metres. Finally, you adjust the sound level of each channel in increments of 0.5 dB. Note that the AVM 20 lets you do this adjustment while using an external audio source like the DVD AVIA. If so desired, all the parameters can be saved and password-protected.

*“... stunning dynamics ... The sound panorama was all-encompassing, to the point where we thought we had twelve identical speakers around the room. Such a vivid rendition – pure magic!”*

For the purposes of this test, Sonic Frontiers also sent us a new seven-channel amplifier, the PVA 7 (not THX certified), which features 105 watts per eight-ohm channel (all-channels driven). The AVM 20 unit that I received for this test was only four days old. In the first few tests I had problems with the Pro Logic mode. After talking it over with the Sonic Frontiers engineers and downloading new software, the culprit code was identified and as you read these lines, everything should be back to normal. What a great thing this computer science!



**MAY THE FORCE BE WITH YOU, ANTHEM**

What better way to test a THX machine than show a film by the THX master himself: George Lucas and his *Episode I*. The first thing that strikes the listener is the absolutely stunning dynamics of the playback. I have discovered, thanks to the AVM 20, unsuspected qualities in my seven acoustic speakers.

The sound panorama was all-encompassing, to the point where we thought we had twelve identical speakers around the room. Such a vivid rendition—pure magic! The performance of the AVM 20 was sort of ... natural! The THX circuits do their job but give a somewhat less exciting musical rendering and slightly reduce the surround-sound acoustic environment. The low frequencies were gut-wrenching. At one point in the movie *U-571*, we can hear a series of loud explosions coming from the right rear speaker. Each detonation comes with a slight “tick,” which I thought was part of the soundtrack since it could be heard at different levels. Wrong! With the AVM 20 this anomaly was practically unnoticeable, even at high volumes.

*“The transitions between the various speakers were very smooth. Once again, it was as if we had a greater number of speakers around us. The extreme bass was sensational while the blending of the subwoofer with the other speakers was absolutely perfect.”*

The energy in the DVD *Titan A.E./DTS* was very well rendered by the Anthem combo. The high frequencies in standard mode were very clear, without being overly aggressive. The “ping-pong” effect frequently present in multichannel sound was almost unnoticeable. The transitions between the various



AVM 20 REAR PANEL

speakers were very smooth. Once again, it was as if we had a greater number of speakers around us. The extreme bass was sensational while the blending of the subwoofer with the other speakers was absolutely perfect.

*"I can't really imagine a high-end home-theater installation where the AVM 20 would not excel. Well done Anthem!"*

I used *Saving Private Ryan* to test Surround EX's compatibility with soundtracks in standard 5.1. Once again, the outstanding dynamics were there when needed. The re-created sound environment reached way beyond the confines of the room, almost as if the room did not exist! In EX mode though, this environment was reduced to more modest proportions and the small details that give so much impact and authenticity were less evident. In each case, the result should be judged in that mode.

Finally, I graded the musical performance in the various multichannel surround-sound modes using a stereo signal. Good news: given that Sonic Frontiers seeks sound quality rather than frills I was expecting their modes to have more sophistication and realism than other manufacturers, (mainly Japanese) and I was right. The CinemaLogic™ is particularly interesting. The "Trittico" piece of the *Reference Recordings* compilation had an audio scene which was very convincing and all-encompassing. All the instruments imaged correctly, but with added space between them, as in a concert hall. The low frequencies were very present; I was very impressed. Same happy results while listening to the *DC Sheffield XLO Test*. After having experienced these simulations, I can hardly wait to see what SACD and DVD-Audio have in store for us, especially with quality multichannel recordings.

### **CONCLUSION:**

The AVM 20 is truly a remarkable processor. It decodes the most common audio-digital formats with amazing accuracy. Its multichannel surround-sound performance, musical quality and simple, intuitive operation make it a winner. Add to all this its multizone capabilities in audio and video, its AM/FM tuner, the possibility of updating its functions by Internet and you get a unit whose cost is more than justified. I can't really imagine a high-end home-theatre installation where the AVM 20 would not excel. Well done Anthem! It would even look very good under the Christmas tree.