ANTHEM™ STATEMENT

D2

"… OUTSTANDING … SUPERB …

Normally, performance like this is reserved

for flagship standalone video processors …"

SECRETS of Home Theater and High Fidelity
www.hometheaterhifi.com

BY KRIS DEERING

VOL. 13, NO. 2

Video processing in A/V receivers and processors isn't that new; several high end receivers now include some kind of video processing, but this is the first time we've seen it to this level. Rather than adding simple de-interlacing or conversion of analog video signals (such as component video) to digital (such as HDMI), the D2 is a complete video processing solution that is more in line with what you see in outboard video processors like those from Lumagen and DVDO.

The video processing board of the D2 is available in two forms. One can get it by purchasing the new Statement D2 A/V processor, or by having Anthem's current Statement D1 SSP upgraded. The upgrade includes the full video processing board plus the addition of four HDMI inputs and one HDMI output. Either way, you get the full complement of features which includes de-interlacing of both SD and HD sources such as full inverse telecine, motion adaptive 1080i de-interlacing to 1080p. The video processing chip also converts composite, S-Video, and component video inputs to digital for output via HDMI at whatever resolution specified up to 1080p. Some other features include adjustments for Y/C delay, image size and position, and chroma bug (CUE) correction.

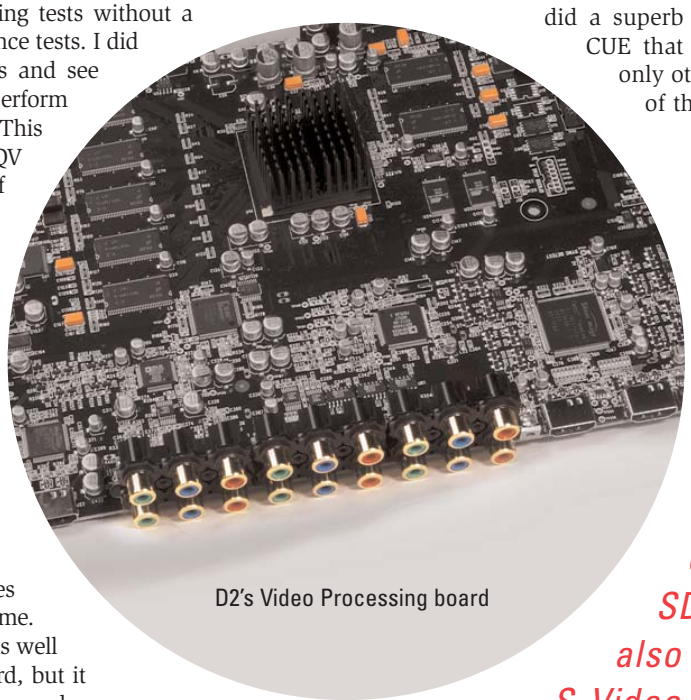
The D2 uses one of the newest and most advanced video processing

chipsets on the market, the Gennum VXP. This is one of only three commercial video processing chipsets that I know of which will do true HD de-interlacing that is motion adaptive and also performs inverse telecine functions. Most of the video processing solutions on the market today do a simple "Bob" that combines the fields together. It could be argued though that even a simple combination like this isn't that bad, because high definition material has so much inherent resolution that the difference isn't as noticeable as it was with SD material, including regular DVDs. As more high definition test material becomes available we will put these opinions and observations into our Benchmark with additional tests.

For this Benchmark, I used several DVD players that output 480i via HDMI. These included the Pioneer Elite 79AVi, the Classe CDP-300, and the Oppo DV-970H. Performance was the same in all regards: excellent.

"Normally, performance like this is reserved for flagship standalone video processors — and very few of those can match the performance of the VXP processing in the D2 …"

The D2's VXP processor does an outstanding job with all of our Benchmark tests and didn't have any problems at all. It passed all of our de-interlacing tests without a hitch, including our 2-2 cadence tests. I did decide to go past these tests and see how the processor would perform with some other material. This included Silicon Optix's HQV Benchmark DVD. As most of our readers know, I consider the Denon DVD-5910 to be the pinnacle of SD video processing performance, and the benchmark in de-interlacing and scaling performance. The 5910 uses the HQV video processing solution designed by Silicon Optix and Teranex. The HQV benchmark DVD includes some mixed cadence tests that have unusual cadences found in animation and anime. The Gennum VXP didn't do as well as the HQV chip in this regard, but it did handle about half of the cadences with no problem. The VXP chip actually did a better job than the HQV in some regards though. This includes keeping a cadence lock through test material loops such as the infamous "Super Speedway" sequence for high detail. The VXP chip is the only one I've tested so far that never drops out of film mode through the loop.



D2's Video Processing board

The VXP also has diagonal line processing for video based material. This is similar to Faroudja's DCDi processing that has been so popular over the years. Using the "3 Angles" test on the HQV benchmark DVD revealed that the VXP does a far better job than the majority of de-interlacing solutions out there. I would say its performance is on par with the HQV chip, but just slightly lower than the DCDi solution.

Moving beyond just de-interlacing, the D2 offers a lot of great features normally reserved for higher end video processors. The processor will accept any color space in and the user can select several different color space output options. This includes 4:4:4 YCbCr, 4:2:2 YCbCr, and RGB. You can also choose between Studio RGB or Extended RGB depending on your application. There are adjustments for Y/C delay, but the resolution isn't as good as the recently reviewed DVDO iScan VP-30. The D2 seems to adjust in full pixel increments which probably won't fix some Y/C delay issues.

One of the handy features of the D2 is the crop input feature. This is a simple pre-determined overscan that will eliminate some of the issues that may arise with 1:1 mapping and not having any overscan on your display. There are a lot of times that you will see anomalies on the outer edges of the image that will be distracting. This is often the case with cable television programming.

The D2 also has a chroma filter to eliminate CUE issues inherent with many DVD players on the market today. I tested this feature with several DVD players, and it did a superb job at eliminating every type of CUE that we test for here at *Secrets*. The only other video processor that we know of that does this is the DVDO line.

"… a complete video processing solution — more in line with what you see in outboard video processors … the full complement of features … includes de-interlacing of both SD and HD sources … also converts composite, S-Video, and component video — for output via HDMI — up to 1080p."

All of the advanced features of the D2 are accessible via an intuitive on-screen display (OSD) that is easy to navigate and understand. Most of the features have an Auto mode for those

consumers who just want to set it and forget it. The D2 has a wide selection of standard resolutions to choose from, including 480p, 720p, 1080i, and 1080p. Other resolutions are supported as well, such as those found in various LCD, DLP, and LCOS displays (setting the processor to the exact resolution of your display means that the D2 will do all the processing and your display will just pass it through to the screen without doing any processing of its own). There are also several different refresh rates supported, such as 24 Hz and 50 Hz. The Gennum chip is completely software upgradeable, and Anthem plans on supporting that feature with firmware updates as issues are found or features are introduced.

"... will do true HD de-interlacing that is motion adaptive ... also performs inverse telecine functions ... outstanding ... a far better job than the majority of de-interlacing solutions out there."

The D2 upgrade does not pertain only to video though. The HDMI inputs are version 1.1 compatible in regards to the HDMI specification. This means they support high resolution, multi-channel PCM, so it will decode DVD-Audio digital bitstreams from players that output this information via HDMI. This also means it is fully compatible with the future Blu-ray and HD-DVD players that output high resolution Dolby and DTS signals associated with High Definition DVDs. I was able to test this with the new Toshiba HD-A1 HD-DVD player, and it worked without a hitch. We will discuss more about these features in our supplement to the Statement D1 review very shortly.

"... fully compatible with the future Blu-ray and HD-DVD players — I was able to test this with the new Toshiba HD-A1 HD-DVD player — it worked without a hitch."

CONCLUSIONS

The Anthem Statement D2 represents a completely new approach to home theater processors, including first rate video processing as well as the standard audio processing. Normally, performance like this is reserved for flagship standalone video processors, and very few of those can match the performance of the VXP processing in the D2. The high definition video de-interlacing is superb and really sets this component apart from the majority of the processors out there. The fact that it is already fully capable of supporting the new high definition formats makes it a secure investment at a time when consumers are worried about making an investment in something they might have to replace later due to changing technology. Keep an eye out for our review of the D2's audio performance soon!

"... a completely new approach ... first rate ... high-definition video de-interlacing is superb — really sets this component apart ... a secure investment at a time when consumers are worried about making an investment in something they might have to replace later due to changing technology."