BRYSTON & DSD

Hi folks

I have been asked a number of times by our customers our position on DSD so please find below our thoughts. DSD currently is available in a number of variations. Assuming you want to produce a product that can grow with time and market forces both hardware and software should to be considered.

DOP 64, 128, 256, 512 (last 2 are theoretical at this point) and DSD Native are the current options. Currently DSD is possible relatively easily with current software and hardware utilizing DOP 64 on current DAC's and to some degree DOP 128

For example:
DOP-64 requires 176.4 capable DAC's
DOP-128 requires 352.8 capable DAC's
DSD Native 64 x 44.1 (standard 2.8224 MHz) (which is equivalent to 16 BIT 176.4 PCM) DAC's.

Currently the majority of DSD capable products today are using DOP-64 architecture and some DOP-128 and DSD Native. There are also some manufacturers that have proprietary hardware and software which are capable of DOP-64, DOP-128 and Native DSD but proprietary software is not compatible with USB 2 drivers etc.

The other issue we are investigating has to do with the sample rate converters in DAC's. In order to activate DSD the sample rate converter on the DAC inut stage would have to be a custom piece because current sample rate converters are not equipped to handle DSD to the best of our knowledge?

So that means in a standard PCM converter like our BDA-2 you would have to bypass the sample rate converter which may cause more jitter because our current sample converters reduce jitter on the input. So in Bryston's case we definitely want the sample rate converter in the circuit for 44.1 to 192 PCM signals. Also some DAC's we have looked at that are DSD capable convert all the incoming sample rates (44,48,88,96,176,192Hz) to a very high single sample rate 'Asynchronously' whereas our preference with our DAC's is to maintain the 'Native' incoming sample rate throughout the conversion process with all PCM signals. If we do up-sample we do it in a synchronous manner so (44.1 becomes 176.4 and 48 becomes 192) not asynchronous.

So before Bryston goes down the DSD road I want to make sure we are providing our customers with the full story and allowing for possible advancements in both hardware and software development as much as possible. Also please offer any info or input if you feel we are mistaken or misinformed.

Note- DOP – Stands for DSD over PCM

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