EXPERT

AUDIOPHILE EVOLUTIVE SYSTEM

WHITE PAPER

Newest inventions
Munich High End Show 2015

INVENTED BY

DEVIALET

INGÉNIERIE ACOUSTIQUE DE FRANCE

MAT DSD ENGINE ®

MINIMAL ARITHMETIC TRANSFORM DSD CORE

The DSD sound format (Direct Stream Digital) was released in 1999 with the introduction of the SACD (Super Audio Compact Disc).
In the « computer audio » era, it has now become much more accessible. Considered by many industry leaders as the most analog sounding of digital formats, DSD has gained a solid reputation over time and has quickly become a reference format for the most demanding of audiophiles.

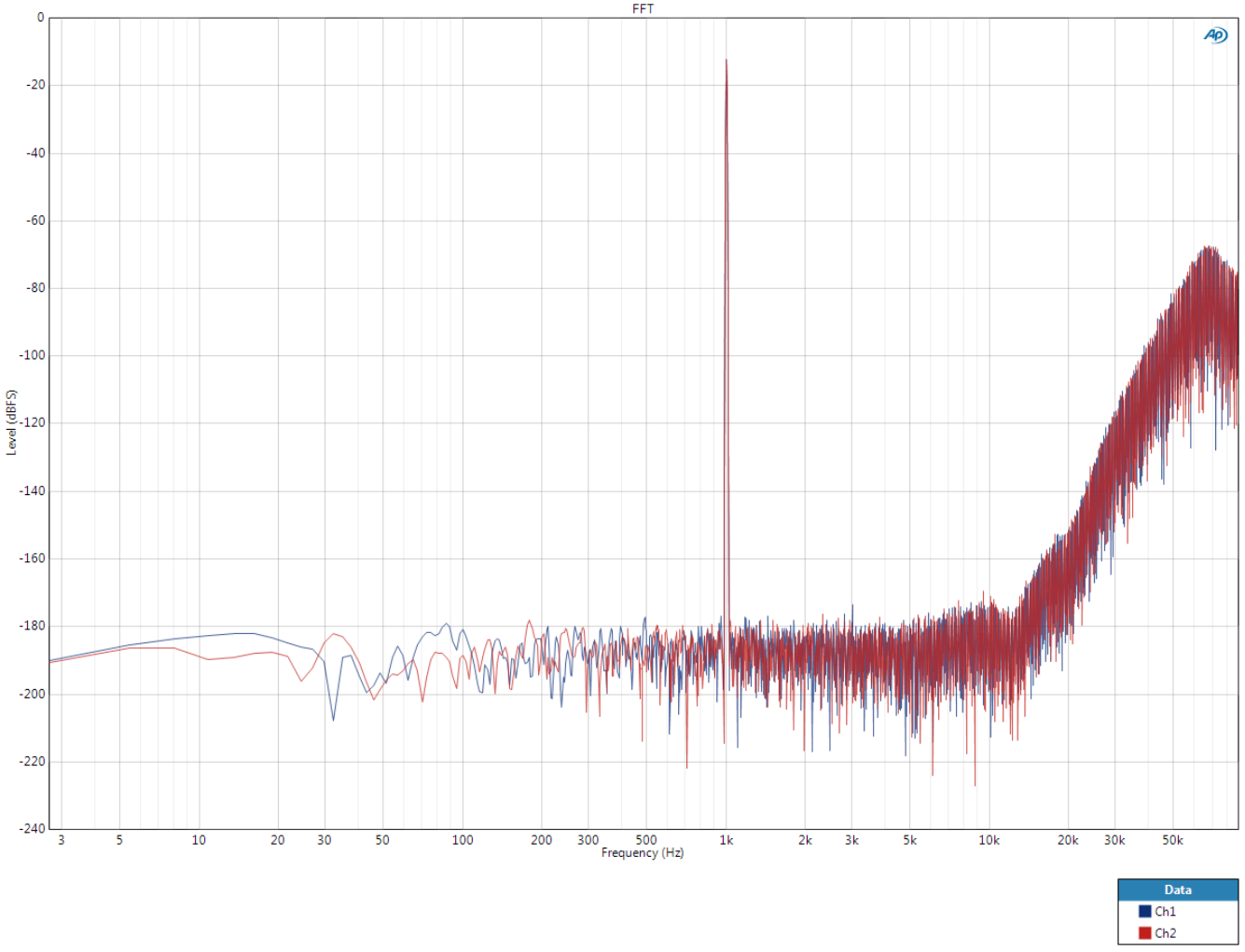
The conventional PCM format of audio CDs encodes music on 16 bits (65536 levels), 44100 times per second, whereas DSD format encodes music on 1 bit (using only 2 levels: 0 or 1) but much more frequently: 2.8224 million times per second (DSD64 ou DSD 1x), 5.6448 million times per second (DSD128 ou DSD 2x) and even 11.2896 times per second (DSD256 ou DSD 4x). The raw bitrate of an audio DSD stream is higher than that of an audio CD and equivalent to a High Definition PCM stream.

Thus, on a bandwidth point of view, it is technically feasible to carry an audio DSD stream over a High Definition capable PCM digital input. The entire Expert range is now compatible with the DoP protocol (DSD over PCM). This new feature is available through the USB input but also on the digital XLR input (AES/EBU), the TOSLINK optical input and all coaxial digital inputs (S/PDIF). A completely unique feature.

MAT® DSD Core technology converts the DSD format into Expert internal native PCM 40 bits / 384 kHz format thanks to an optimized algorithm, limiting the amount of computational operations on the audio stream. Using only 15 bit perfect additions (no multiplication, no storage), the MAT® algorithm performs a 128 taps, linear phase FIR (Finite Impulse Response) digital filter ensuring the conversion of the DSD format into internal native PCM format with truly outstanding performances.

8.0 firmware

MAT® algorithm applied to a 1kHz sinewave center



RAM PHONO STAGE®

RECORD ACTIVE MATCHING

You can now perfectly tune the phono stage of your Expert system to your vinyl records, regardless of country of origin or the year of their production.
Thanks to the numerous new settings, this can be achieved by changing the equalization curve and various parameters (mixing mode, level) all done on-the-fly.

Serving the musical heritage. Discover your vinyl records exactly as they were meant to sound, today or 50 years ago.
Here is a list of the equalization curves available:

RIAA 1953, RIAA 1976, NAB, RCA, COLUMBIA, EMI, AES, DECCA, L'OISEAU LYRE, TELEFUNKEN, CAPITOL, MGM, ESOTERIC.

More to come via Devialet Expert software upgrades.

CHANNELS	STEREO
EQ CURVE	COLUMBIA
MAX LEVEL	10.60 MV
LOADING	60 Ω
	0 PF

Take advantage of 2 independent phono inputs on the Devialet 200.
Up to 4 on the Devialet 400 and Devialet 800.

The unique combination of RAM® Phono Stage, which perfectly adapts the phono stage to each vinyl record, ADH® Intelligence, which ensures lossless amplification and SAM® Processing, which perfectly adapts the signal to each loudspeaker model, providing an ultimate audiophile experience that only Devialet Expert is able to offer to the market.

8.0 firmware

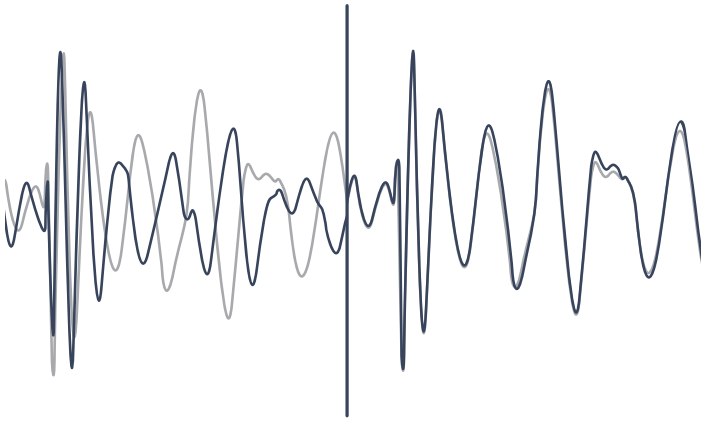
SAM PROCESSING ®

SPEAKER ACTIVE MATCHING

Introduced in 2014 to every model in the Devialet Expert range, SAM® Processing precisely adapts the signal to the characteristics of your speaker model. In 2015, SAM® continues to evolve and improve with the introduction of SAM® V2, which now supports the most complex speakers designs.

These include:

- The modeling of loudspeakers with up to 4 bass drivers, including passive radiators.
- Distinct modeling of both left and right loudspeakers, for an integral optimization of a stereo system.
- Improvement of loudspeaker protection at high pressure levels.
- Increase of the maximal acoustic pressure of low frequencies.
- Improvement of the group delay at high acoustic pressure, better presentation and soundstage all over the spectrum: lows, mids & highs.
- Optimization of the algorithm, reducing the overall amount of computational operations.
- Even more precision and 50% less CPU load: a promise of future evolutions.
- SAM® V2 introduces compatibility with the parameters generated by SAM Lab®.



8.0 firmware

SPEAKER ACTIVE MATCHING, PORTABLE LABORATORY

SAM Lab® is the latest innovation invented inside Devialet's acoustical and signal processing laboratories. SAM Lab® revolutionizes the way speakers are measured.

In 2014, in order to measure and obtain the SAM parameters several days of measurements were needed with the first speakers Devialet analyzed. The engineers opened these individually, measured each driver, cross-over filters, and the cabinetwork.

In 2015, thanks to SAM Lab, the same speaker model can now be entirely characterized in less than 8 minutes,. This can be achieved in semiautomatic manner, without having to open the speakers.

SAM Lab is a portable and extremely powerful piece of equipment which will allow Devialet to accelerate the process of making a speaker SAM Ready, and to reach all the speakers on the audiophile market.

SAM Lab is composed of three elements:

- A Devialet Expert 200.
- The SAM Lab® device: it is placed between the speaker which needs to be modeled and the Devialet Expert.
- The SAM Lab software, conducting the three elements, measures everything in a semi-automatic manner and calculates in real time the SAM V2 parameter set.

The best measuring tool to measure the speakers is therefore Le 200 with the Devialet Expert 8.0 Firmware and an SDcard with a specific SAM Lab configuration. All this is allowed by the powerful EVO Platform® concept: the Devialet becomes the measuring tool allowing a speaker to become SAM Ready.
The SAM Lab device, specially designed to interface with Le 200, combines all the connections required to make a speaker SAM Ready with the laser control system which measures the movement of the drivers' membrane.
The SAM Lab software runs on Macintosh and PC. It makes it easy to measure in just a few steps all the measurements and calculations that are required to characterize a speaker. Devialet specially developed algorithms able to automatically calculate the key parameters of the speaker.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RIGHT SPEAKER


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