Synästec Audio

The Origo SACD Player

The Perfect Source

Music lovers who have a substantial collection of CDs and SACD desire to have their music played in the most original, uncompressed and unaltered form. They need is a digital disc player that will perform this direct music reproduction every time they pull out their favourite music from the shelf. The perfect machine is here--the Synaestec Audio Origo SACD player, an equipment which bridges the digital domain to the realistic analog world.

Stairway to perfection

The heart of the Origo SACD player is the all time legendary PCM1704K, the premium grade 24 bit pure ladder Digital to Analog Converter. A ladder-type DAC has no internal processor or digital modulator, in other words, the boundary between the digital and the analog is clear. Also, a ladder-type DAC does not rely on error correction, precision is achieved by a time-consuming laser trimming process in the R2R resistor network. This is why they are so expensive and rarely used in new digital players. In the Synaestec Audio Origo SACD player, four of these select DAC chips are used in each channel in a parallel balanced configuration, to produce an absolutely distortion-free analog output signal.

Stable Spin

The Origo is equipped with a disc loading system produced by the Esoteric Company, which has been heavily modified by Synaestec audio. This precision disc loader is installed on a 35mm-thick machined aluminium platform to eliminate any possible mechanical vibration. The jitter-sensitive master clock is located right on the external DSP board and the disc loader is operated in slave mode to avoid the need to throw the critical clock signal through long distances.

Baking Clock

While the Rubidium atomic clock is widely being used in advanced GPS application, there is an even better solution for high-end digital audio systems. The Oven-controlled-Crystal-Oscillator (OCXO) used in the Origo is a sophisticated SC-cut quartz crystal oscillator housed in a temperature regulated chamber, shielding itself from fluctuations in ambient conditions. This OCXO does not only excel equally in terms of aging and long term stability compared with an atomic clock, but it is also superior to the latter in phase noise and jitter performance, a truly ideal reference clock for digital audio systems.

Having the most precise clock in a CD player is crucial, and bringing the clock signal to the DAC accurately would be equally important. Synaestec has adopted for the Origo the same high-speed matched load differential transmission line technology used in high-definition video interface. The technology is capable of processing extremely high data rate up to several Giga bits per second with less than 1ps added jitter. The differential architecture of this high-speed clock interface prevents interference between clock and data line, and also prevents digital noise leakage into the analog circuit.

Faster And Better

Synaestec has chosen the dedicated ASIC chips for asynchronous up-sampling and over-sampling. These customized ICs offer much higher processing speed as well as reliability than their programmable counterparts. The linear phase FIR digital filter in these ASIC chips provides 768KHz final sampling rate to the DAC, which is twice the rate of other hybrid type DAC. Furthermore, their theoretically perfect filter performance is maintained with any given input sampling rate.

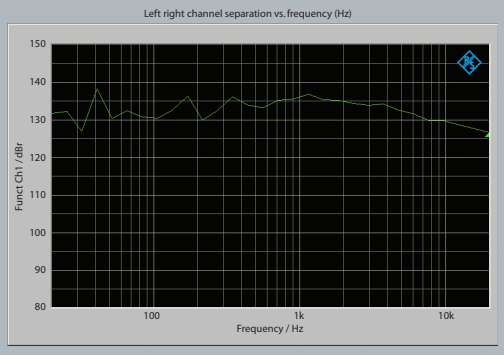
Passively Activated

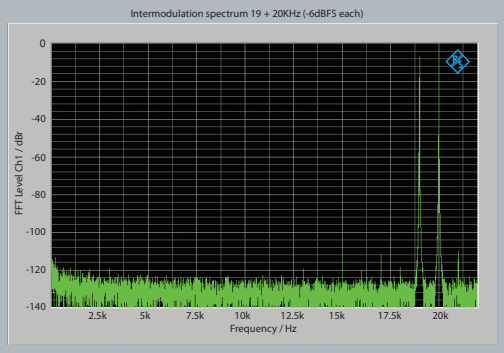
The high sampling rate of the Origo effectively expels digital artifacts much further away from audible frequency, allowing the use of very gentle analog filters in audio output. Thus the designated analog reconstruction filter has a minimalist design built with all passive components, just audio grade resistors and polypropylene film capacitors. There is no additional active analog circuit that might contribute to noise, distortion or excessive phase shift in this output filter. In short, nothing but pure music.

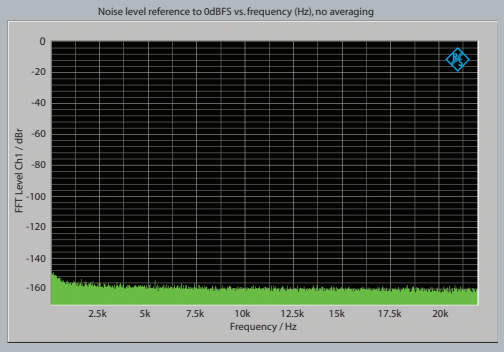
Zero Interference

Every individual functional part of the Origo disc player is both physically and electrically isolated. Aluminium panels 5mm thick are used as shielding between each section, such as power supply, disc loader, micro-controller, DSP and the DAC. All the non-audio related circuits are galvanic isolated by high-speed digital capacitive barrier isolators. This means several different pieces of equipment seamlessly pieced together, without any harmful interference

Nothing but music, pristine, perfect.







Specifications:

Digital inputs:	1 symmetrical	Input impedance	110 Ohm
	1 asymmetrical	Input impedance	75 Ohm
		Minimum input level	0.2V pk - pk
	USB 2.0 high speed compliant		
Digital outputs:	1 symmetrical	Output impedance	110 Ohm
		Output level	1.6V pk-pk
	1 asymmetrical	Output impedance	75 Ohm
		Output level	1.2V pk-pk
Input resolution:	Up to 24bit-192KHz		
Core sampling rate:	768KHz internal		
Frequency response:	20 Hz to 40 kHz (+0 / -1.0 dB)		
THD+N:	<0.001%		
Noise floor:	<-160dBr		
Channel separation:	>130dB		
Analogue outputs:	1 symmetrical	Output impedance	150 Ohm
	1 asymmetrical	Output impedance	75 Ohm
	Full scale output voltage		3.9Vrms
Power consumption:	50W		
Weight:	38kg net		
Dimension:	485 mm x 485 mm x 185 mm (W x D x H)		

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