CD - SACD - Player - PULSAR SACD 1245 R

The **SACD 1245 R** is a thoroughbred two-channel player which we developed to provide the highest standard of stereo reproduction from CD and SACD. T+A's overall design philosophy for audio playback is unique: for each music format there is an independent, dedicated signal processing section incorporating pulse resynchronisation, designed to minimise jitter. This is known as the Reverse Clock Process, and was developed by T+A ten years ago: the system provides perfect synchronisation of the converter and mechanism clock signals; there are even separate oscillators for CD and SACD.

Connection elements

Mechanism and decoder

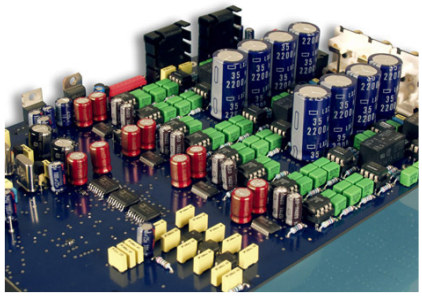
This latest generation of highly refined mechanisms is crystal-controlled. The design is optimised for CD and SACD formats with precision dual-laser systems, and tracks discs with enormous security. Mechanical encapsulation, vibration de-coupling measures and shielding keep all external influences away from the disc mechanism. The decoder is equipped with the latest generation of super-performance processors designed for the various formats; error correction was already good, but we have been able to improve it further. A crucial factor in the superb overall result is the ingenious, carefully considered overall design and layout of the individual sub-assemblies. Signal paths are kept to the absolute minimum length, thereby minimising their susceptibility to interference influences and conductor losses.

The mains power sections and voltage supplies for the digital and analogue sections are kept strictly separated, to avoid any trace of interference coupling. Both sections are extremely stable under load; the analogue mains section is even equipped with a torroidal transformer. Every stage features multiple

Quadrupel D / A - converter

The new converter is unique even by T+A standards. No fewer than eight highly selected Burr Brown D/A converters are employed; these are acknowledged as the world's best. The quadruple converter enhances the work of the differential converter. The design of the differential converter (2 D/A converters operating in

symmetrical push-pull mode) completely cancels out equal pulse errors, halves uncorrelated converter errors, and reduces uncorrelated background noise by 3 dB. The quadruple converter features twice the number of converters, i.e. there are now four converters per channel. This reduces uncorrelated converter errors to one quarter, and background noise by 6 dB. The effort invested in this converter layout is immense, but the results are worthwhile!



Of course, we use a freely programmable signal processor, so the player still features the switchable oversampling algorithms for CD playback for which T+A is renowned, i.e. the listener can select the best possible reproduction to suit his personal taste, according to the quality and mix of the disc material. For SACD playback our engineers have also developed oversampling and noise-shaper circuits which can be switched to four different modes, generating curves of different gradient and secondary wave suppression. These circuits make it possible to carry out highly effective fine-tuning to match the sound characteristics of the chain connected to the player. After the conversion section comes an extremely sophisticated audiophile analogue output section of discrete construction. To prevent any danger of the digital section influencing the analogue section, these two sub-assemblies are separated and de-coupled completely using a unique T+A circuit design. The control signals are transferred via opto-couplers, while the latest jitter-free magnetic iCouplers from Analog Devices are employed to cope with the high-speed data signals. The overall result is that the machine achieves genuine analogue High-End sound quality both with CD and also with SACD.

Bandwith switching

The DSD process used for SACD inevitably generates increased background noise in the region above about 40 kHz. Not all amplifiers can cope with this layer of high-frequency noise. In the simplest case the amplifier simply becomes very warm, but in many cases the amplifier also generates intermodulation effects or other distortion products, and these can have an adverse and extremely disturbing effect in the audible frequency range. One solution for us would have been to limit the frequency response of the player to the lowest common denominator, in order to cope with amplifiers of moderate quality, and this would have been the safe route. However, we were not content with this, so we decided to equip the SACD 1245 R with a pure analogue output filter which can be switched between 60 kHz and 120 kHz bandwidth. By this means it is possible to set up the player to match any amplifier very accurately, and where a good, wide-bandwidth amplifier is used, there is no need to forfeit anything in terms of frequency response and phase linearity.

Specifications:

Formats

Audio CD, CD-R / RW, SACD-Stereo

Audio

Audio outputs (analogue)	Stereo (quadruple circuit with 8 converters)	
Audio outputs (digital)	1 x coaxial, 1 optical IEC 60958 (CDDA / LPCM) IEC 61937 (MPEG1/2, Dolby Digital, dts) (1,2)	
Output level / Impedance	2,5 Veff / 22 Ohm	
D/A - Converter f. CDDA	Double-mono-quadrupel 4 x 24 Bit 384 kHz Sigma/Delta	
D/A - Converter f. SACD	Double-mono-quadrupel DSD-differential converter	
Frequency response	CD	2 Hz - 20 kHz
	SACD normal	2 Hz - 60 kHz
	SACD wide	2 Hz - 120 kHz
Total harmonic distortion	< 0.001 %	
Effective system dynamic	CD	100 dB
	SACD	110 dB
Signal / Noise	115 dB (A-weighted)	
Channel separation	110 dB	

Allgemein

Dimensions (H x W x D)	7,5 x 44 x 39 cm
Remote control	über R-System
Finisches	Black (RAL 9005) Alu silver

We reserve the right to alter technical specifications.