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CD32 Design Brief, 3 pages.

CD32 CD player

The CD32 is the successor to and upgrade for the successful and acclaimed balanced CD31 CD player. Every component, from the CD transport to the audio output stage, has been designed to achieve the highest possible audio performance.

Audiophile Topology

The CD32 Compact Disc player is housed in an alloy heavy gauge steel chassis, which provides strength, rigidity, and screening, while being effective at damping vibrations from external sources.

From the CD transport we extract the AES/EBU (balanced SPDIF) signal and feed it to a SRC4382 sample rate converter (converts to 96kHz), which incorporates jitter suppression capabilities, ensuring that the DACs receive as a clean digital signal as possible. The SRC4382 also provides the option to select either up sampling to 96kHz or bypass (44.1kHz).

The CD32 uses two high-performance Burr-Brown PCM1704 DACs in conjunction with a DF1706 digital filter – one of the best true multi-Bit digital-to-analogue converter/digital filter combinations available. The current to voltage conversion stage is fully discrete (no Op-amps) and ends in a single-ended output stage consisting of a single MOSFET transistor driven by an active current source (preferred to passive resistors).

The CD32 contains no capacitors in the signal path: a DC-servo takes care of any DC offset present in the circuit or from the DACs.

SMD technology and separate PCB modules are used throughout the design in order to keep the signal paths isolated and as short as possible.

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Transport

The CD32 uses a dedicated CD-transport incorporating a Sanyo laser and is not built around a multi-format CD/DVD-ROM interface. The Toshiba based servo circuit incorporates a five second FIFO memory in order to provide the best jitter suppression and protection from mechanical shock.

High Performance Power supply

In order to meet the latest standby power consumption standards, the CD32 incorporates a switch mode power supply for its microprocessor circuit. However all the analogue and digital audio circuits are supplied from a R-core transformer with separate windings for mechanical, analogue and digital circuits. These voltages are closely regulated by a discrete power regulation circuit comprising L-C filters and discrete components. This high performance circuit (low ripple etc.) ensures that more than enough regulated power is available to reproduce with accuracy even the deepest sonic transient capable of being recorded on a compact disc.

This power supply configuration together with carefully designed ground planes and paths, separated circuit boards and discrete current-to-voltage conversion gives the CD32 the especially clean wideband audio performance expected by audiophiles all over the world.

Display and user features

The player incorporates a white modern OLED display, which is isolated from the audio circuits by the front panel design. During play the display will auto-dim to a point where it is still readable without disturbing the listening experience. When connected to the I32 via IR, the CD32 and I32 display brightness will match.

The CD32 sample frequency can be switched between 44.1 kHz, 48 kHz and 96 kHz.

The CD32 will play MP3/WMA over disc or USB in conjunction with comprehensive track programming abilities.

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Inputs/Outputs

Inputs: USB interface; IR input 3.5mm; RS232; Trigger in/out 3.5mm

Outputs: Balanced (XLR) and unbalanced RCA analogue outputs are provided together with professional AES/EBU, SPDIF and TOS-link digital outputs. RS232C, IR as well as trigger connections are available for successful integration with home automation systems.

Product specification CD32

Mechanism	Asatech 8210.B01-02, Sanyo SF-P101N
D/A converter	2x PCM1704, DF1706 (digital filter), 24/96 kHz
Analogue outputs	Discrete analogue output stage; 1 pair RCA, 2.1 Vrms; 1 pair XLR, 4.1 Vrms;
Output impedance	RCA 390 'Ω; XLR 47 'Ω
Digital outputs	1x SPdif (RCA); 1x AES/EBU (XLR); 1x optical (TOS-link)
Frequency response	20Hz – 20 kHz -0.5dB
Signal to Noise	20Hz – 20kHz unweighted -100dB
THD + N	20Hz – 20kHz <0.01%
Other inputs	USB interface; IR input 3.5mm; RS232; Trigger in/out 3.5mm
Power consumption	Standby 0.5W; Idle 22W; Operation 25W
Dimensions (wxdxh)	430 x 385 x 110mm
Weight	9 kg
Colour options	Black or Titanium

Ends.