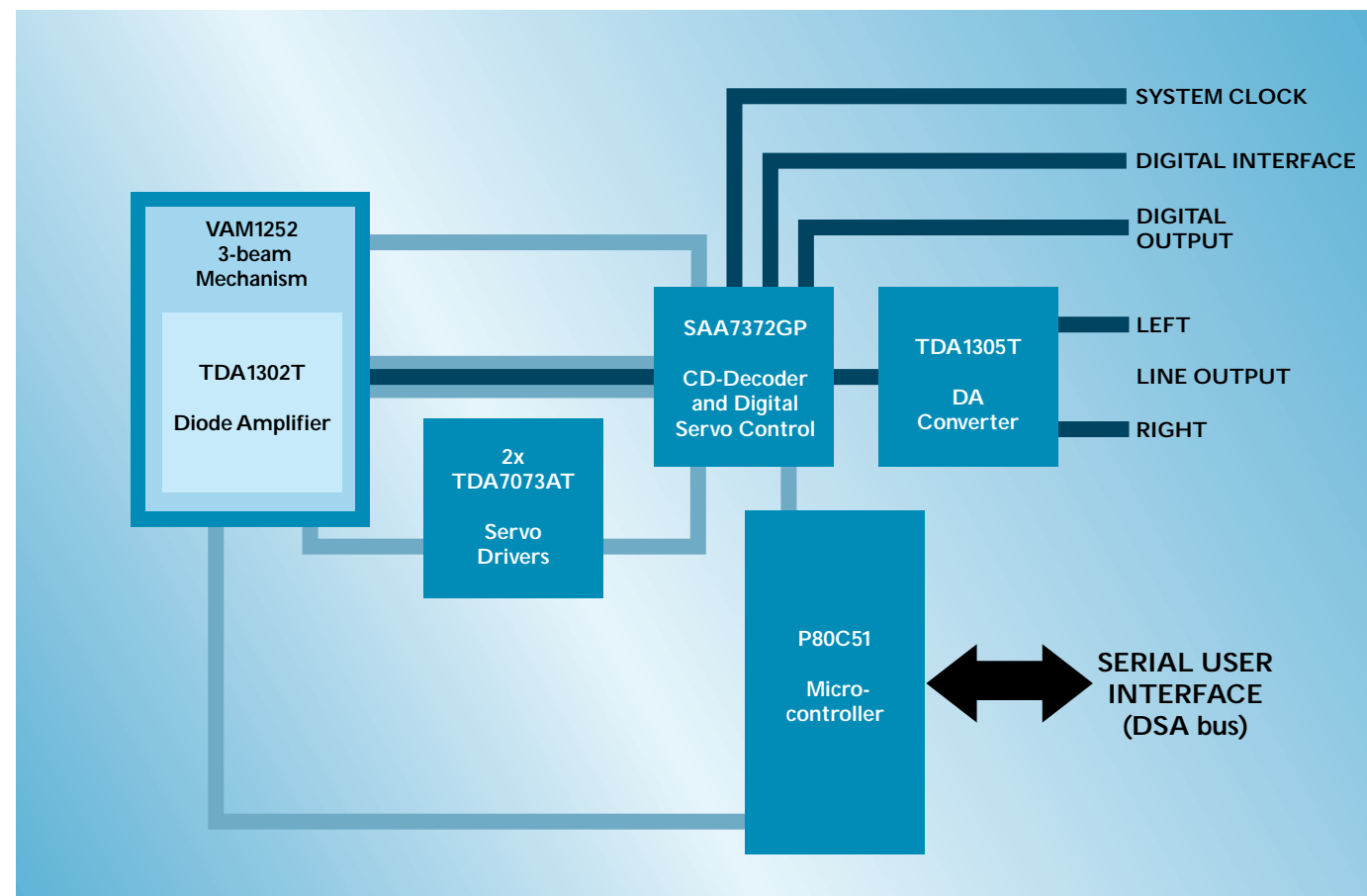


High-performance and reliability, industrial-standard



PREMIUM 7000 basic subsystem for heavy-duty CD players

- Supplied as a completely assembled module, including print-board.
- Heavy, industrial-standard CD-mechanism for excellent stability and performance.
- CD7 system: superb playability and additional features.
- One-chip CD-decoder and digital servo controller.
- Comprehensive serial control interface (DSA).
- Top performance and playability thanks to the digital servo system.
- Servo system optimized for minimum operating noise.

The **PREMIUM 7000** is a complete CD-subsystem, combining the benefits of extended performance and easy design-in. The pre-developed system software in the 80C51-based micro-controller, for example, reduces design-in time to an absolute minimum.

The subsystem is supplied as a CD-PRO assembled module (VAU1252),

see Section 6, to simplify assembly of CD jukeboxes and other professional players.

The CD-PRO VAU1252 concept, digital servo system, with the HF amplifier and laser control system included on the sledge is an extremely robust design, giving extremely high performance.

The microcontroller controls all the servo and CD-decoder functions. Communication with the user microprocessor is provided via a well-defined, customer-friendly 3-wire serial bus, called DSA (Data, Strobe, Acknowledge).

For accurate radial access with minimum jump-noise, the 3-beam VAM1252 CD-PRO mechanism features a high-speed sledge motor with low-ratio gearing and optimized speed control. The mechanism is controlled by a digital servo system, based around the SAA7372GP CD7 decoder. The servo processor part of the IC has been optimized to provide excellent performance, supported by special features such as enhanced tracking

capability and automatic initialization procedures. No external adjustments are necessary.

Special suspension units were developed for the mechanism to provide the extra damping required for optimal performance against shock and vibration.

The system uses an advanced semiconductor concept – CD7, Philips' very-highly-integrated approach for CD-system solutions. The main feature of a CD7 system such as PREMIUM 7000 is that it uses a combined CD-decoder and digital servo controller in one chip, in this case, the SAA7372GP. CD7 provides improved playability and additional features compared to earlier solutions.

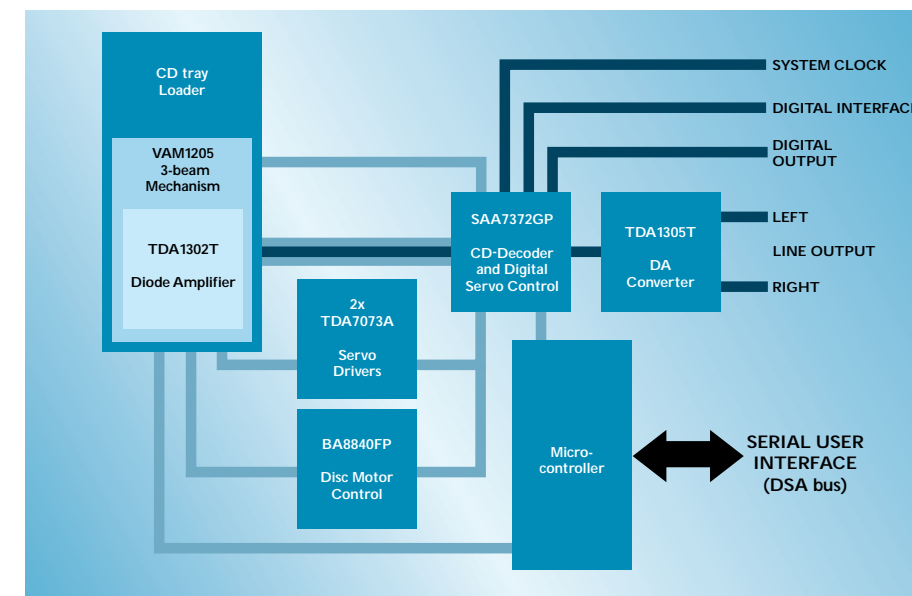
Power for driving the disc motor, and the focus, radial tracking and sledge actuators is provided by two TDA7073AT dual servo power drivers.

Digital-to-analog conversion is performed by a TDA1305T. This IC is a bitstream continuous-calibration stereo DAC with 16-bit digital input, and analog voltage output. The performance of the DAC section can however be enhanced by using another DAC able to fully exploit the superb quality of the digital audio signal produced by this system.

Being fully digital, the complete system has no potentiometers, and no ageing effects.

Derivative systems

The **PREMIUM 7050** is a complete pre-developed CD-engine for high-end single and double-speed audio and video applications. It combines the benefits of extended performance and easy design-in, the pre-developed system software in the microcontroller reducing design-in time to an absolute minimum.



PREMIUM 7050 subsystem

Though similar in many respects to the PREMIUM 7000 just described, the PREMIUM 7050 has a different mechanism, the VAM1205. This mechanism and digital servo system, with the HF amplifier and laser control system included on the sledge, is an extremely robust design, giving extremely high performance and long life thanks to the mechanism's brushless disc motor. The PREMIUM 7050 subsystem is suitable for use with a loader.

Like the PREMIUM 7000, the PREMIUM 7050 provides all the benefits of a CD7 system, benefits such as low component count and exceptional playability. The PREMIUM 7050 uses the same CD7 decoder, the SAA7372GP, which can operate at 1x and 2x data rates.

Main features of PREMIUM 7050:

- Suitable for high-end single and double-speed audio and video applications.
- CD7 system: superb playability and additional features.
- One-chip CD-decoder and digital servo controller.

- Comprehensive serial control interface (DSA).
- Servo system optimized for minimum operating noise.

PREMIUM 7000 & 7050 SYSTEM PERFORMANCE (typ. values)	
Disc size	8 and 12 cm.
Formats	CD-DA, CD-ROM, CD-I, CD-ROM XA, CD-Extra, Video-CD, Photo CD
Digital output	EBU-standard
Digital interface	I ² S/EIAJ* Subcode channels Q..W
System clock output ⁺	16 MHz
Line output	yes

AUDIO PERFORMANCE	
Determined by the DAC	
Frequency response	20 Hz to 20 kHz
THD	-80 dB
Channel separation	90 dB
Signal-to-noise ratio (A-weighted)	100 dB

POWER SUPPLY	
Supply Voltage	5 V, 9 V
Supply current (5 V)	1 A max.

RELIABILITY	
MTBF (25%)	30000 h

* user programmable format
⁺ option for PREMIUM 7000