KRELL

THE LEADER IN AUDIO ENGINEERING

KPS 25sc

Krell Playback System

An Integrated
Compact Disc Transport,
Digital-to-Analog Converter,
and Analog Preamplifier

THE KRELL PLAYBACK SYSTEM

KRELLCAST TECHNOLOGY

CAST, or Current Audio Signal Transmission, solves two of the most pervasive and difficult problems encountered in configuring and connecting an audio or audio/video system. The first difficulty lies in the nature of the connection between a system's front end – the preamplifier and all the source components feeding it – and the power amplifier(s). Here, basic impedance matching is never a simple phenomenon. A prime culprit is the cable connecting preamplifier and power amplifier. Indeed, a cable's influence can be so profound that it becomes a tone control – sometimes very unsubtle – instead of a simple path for a musical signal. The second, and admittedly derivative, problem is the length of cable between front end and amplifier. Although longer cables have practical advantages – they allow placing front ends closer to users and amplifiers closer to loudspeakers – they often degrade system performance as their greater reactive effects have greater impact on sound quality. CAST alleviates both concerns. Deceptively simple in concept, CAST reverses conventional wisdom that says voltage transfer from source to load demands that a preamplifier's output be low impedance and that the power amplifier's input be high. Unfortunately, this combination places a large burden on the connecting cable in that its impedance will alter or distort the signal voltage operating the amplifier. In contrast, CAST transfers current rather than voltage from a high impedance source to a low impedance load. In doing so, a cable's effect is minimized – if not totally eliminated – as its impedance characteristic becomes but a minute portion of the total interface. CAST results in far simpler – and far more accurate – signal transfer. It unveils musical subtleties as it immunizes a system against cable-induced variables.

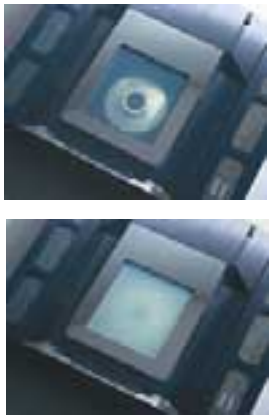
REMOTE CONTROLS

D/A CONVERTER

The KPS25sc's D/A circuitry is the culmination of years of dedicated effort to extract and preserve all the musical grandeur contained in the vast CD repertoire available today. Beginning with a high speed digital filter operating at 352.8 kHz (8 times faster than the CD-standard 44.1 kHz sampling frequency), the KPS 25sc delivers far more than expected from any compact disc. Composed of two Motorola DSP 56009 microprocessors (one for each channel), this filter is controlled by Krell-written software that interpolates intermediate values between disc samples and provides enhanced resolution. A third microprocessor decodes and filters HDCD-encoded discs automatically. After filtration and now in 24-bit format, digital data reaches four D/A modules, each capable of 8x performance balanced configuration to fully preserve the musical benefits of the filter's 8x output. Digital data from other sources is subject to the same rigorous yet revealing process. Here, a low-jitter input module automatically senses and adjusts to any common consumer or professional data format – up to 24 bits and 96 kHz sampling frequency – before sending the incoming data stream to the digital filter-D/A circuits. Finally, every stage of digital circuitry derives its timing from a single master clock. This eliminates beat frequencies that often obscure subtle musical details in less well governed designs. The result? Simply superb reproduction of any of today's digital sources. And it happens only when science serves art – when Krell serves music.

TRANSPORT

Often overlooked when evaluating a CD component, the disc transport/laser assembly is absolutely critical in beginning an accurate playback process. The challenge is one of scale. All the musical information on a CD resides in a pit spiral fully three miles long! When you consider the disc's less than 5 inch width, you begin to appreciate the microscopic dimensions involved and the enormous burden they place on the optical assembly. Krell's solution is fully in keeping with its reputation. The data-grade transport, exclusive to Krell in North America, is anchored to a massive copper plate. The high-torque disc motor, a cog-free design, benefits from rare-earth neodymium magnets. The laser assembly itself rides on a belt-driven, high-mass sled and is under the constant control of precise micro-servos. Disc clamping – vitally important but often given low priority in less-sophisticated mechanisms – is handled by a electrolyzed aluminum weight that both flattens and stabilizes the disc. Held by magnetic attraction when placed on the drive spindle over a disc, it is instantly removable for easy disc changes. An ideal amalgam of high mass for stability and high torque for quick response, and decoupled from both internal and external vibration by precisely tuned elastomer mounts, the entire assembly provides the highest level of accuracy by eliminating almost all significant causes of data error.



A remarkable new feature highlights the KPS 25sc's elegant design. The heavy prismatic acrylic cover over the transport mechanism contains an electronic LCD shutter. Transparent when the transport is stopped, it turns opaque when a CD is playing, thus protecting the disc's data integrity from the effects of stray light!

PREAMPLIFIER

In addition to uncompromised digital performance, the KPS 25sc contains the finest preamplifier Krell has ever produced. It provides one-touch selection of either the internal CD transport or 10 external sources (5 digital, 5 analog). Even the normally mundane volume control is a study in high-accuracy precision engineering. And the KPS 25sc offers a choice of remote control options. A plethora of analog and digital outputs allow the KPS 25sc to serve as the heart of the most complex home music system. Outputs to the power amplifier of your choice includes conventional single-ended and fully balanced connections. CAST circuitry assures maximum signal integrity when the KPS 25sc functions with a CAST-compatible Krell power amplifier. But the real reason d'être behind this stunning preamplifier section is its remarkable sound quality. All analog circuitry follows the Krell tradition of fully balanced Class A design. In addition, the KPS 25sc features Krell Current Mode topology to deliver a wide bandwidth, low noise signal under all operating conditions. A unique combination of exact yet imaginative engineering, the KPS 25sc presents an ideal blend of cutting-edge performance and elegant simplicity. It is supremely capable yet invitingly accessible. It is, after all else is said, a Krell.

KPS 25sc Specifications:

FREQUENCY RESPONSE
0.1 Hz to 1 MHz +0 dB, -3 dB

TOTAL HARMONIC DISTORTION (THP/THD)
BALANCED, UNWEIGHTED
1 kHz ‹ 0.005%
20 kHz ‹ 0.008%

SIGNAL TO NOISE RATIO
BALANCED, "A" WEIGHTED 104 dB

CHANNEL SEPARATION
92 dB @ 1 kHz

DIGITAL TO ANALOG CONVERSION
Dual balanced conf. 24bit/96 kHz DACs

DIGITAL FILTERS
8 x oversampling employing dual Motorola 56009 DSPs, HDCD employing Pacific Microsonics PMD 100

DIGITAL CLOCKING SYSTEM
Master clock synchronizes disc drive, laser assembly, DSP circuit, and decoder circuit

OUTPUT VOLTAGE
BALANCED 13 Vrms

POWER CONSUMPTION
90 W

INPUT IMPEDANCE
98 kOhm

OUTPUT IMPEDANCE
17 Ohms

GAIN
BALANCED 12 dB
SINGLE-ENDED 6 dB

DISC DRIVE
Top loading mechanism featuring cog-free motor assembly and belt driven laser assembly

DISC CLAMP
Machined, electrolyzed aluminum with neodymium magnet

DIGITAL INPUTS AND OUTPUTS
1 AES 110 Ohms, 3.5 V via XLR connectors
2 S/PDIF 75 Ohms, 0.5 V via RCA connectors
2 EIAJ optical, via TosLink connectors

ANALOG INPUTS
1 pair balanced via XLR connectors
4 pair single-ended via RCA connectors

ANALOG OUTPUTS
1 pair fixed balanced and 1 pair variable balanced via XLR connectors
2 pair fixed single-ended and 1 pair variable
single-ended via RCA connectors
1 pair variable Krell CAST via 4-pin bayonet connectors

VOLUME CONTROL RESOLUTION
16-bit

BALANCE CONTROL RESOLUTION
0.5 dB

REMOTE CONTROL
1 tabletop direct access wireless infrared
1 handheld wireless infrared
1 RC-5 via a DC power connector
1 12 VDC Input (12 V trigger) via a 3.5 mm mini plug
1 Krell Link input
1 Krell Link output

DIMENSIONS WITH COVER CLOSED
19w x 5.3h x 15.4d in.
48.3w x 13.3h x 39.1d cm

HEIGHT WITH COVER OPEN
20 in., 50 cm

WEIGHT
Unit only 45 lb., 20.5 kg

All operational features, functions, specifications, and policies are subject to change without notification.

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TECHNOLOGY INFORMATION

The Krell Playback System 25sc: Technology Serving Music

Engineering, the practical implementation of pure science, is a rigorous and disciplined undertaking. Enjoying music, on the other hand, is an emotional, often fervent, experience.

Krell pursues both.

The KPS 25sc combines three components – an advanced CD transport, a proprietary digital-to-analog converter, and a complete system preamplifier/control center – in one chassis. Although contrary to conventional wisdom touting the advantage of separate components, Krell transforms the KPS 25sc into a technical tour de force. Not only is the KPS 25sc a magnificently engineered product, it is a supremely musical one as well, one that best serves the needs of even the most demanding connoisseur.

The KPS 25sc offers the following technologies to enhance your musical enjoyment:

The professional-quality disc reading mechanism features a high power neodymium direct drive motor, a belt driven laser mechanism, and viscous damped suspension. This combination assures bit-perfect recovery of even the faintest musical nuances from your most revealing CDs.

A massive prismatic transport cover automatically activates an electronic shutter to prevent data-corrupting light intrusion during CD playback.

A Krell-designed digital filter uses two Motorola DSP (digital signal processing) engines and custom-contoured interpolation software to provide more musical detail. In conjunction with another advanced microprocessor, this filter also provides total compatibility with HDCD-encoded discs.

A unique implementation of four 24-bit/96kHz digital-to-analog converters (two for each channel) produces output equivalent in detail to that previously available only to professional recording engineers.

A reference-grade preamplifier with fully balanced Class A circuitry features Krell Current Mode design for unimpeded pass-through of all musical details.

The KPS 25sc has a unique feature for easy integration into home theater systems: Theater Throughput. In Theater Throughput mode, the main output signal from an external surround sound processor bypasses the volume and balance controls, providing a direct connection, at unity gain, to the amplifiers powering the front left and right speakers.

Krell CAST (Current Audio Signal Transmission) technology improves musical coherency by solving the problems inherent in transferring delicate musical signals from preamplifiers to external power amplifiers.

Three totally independent regulated power supplies (analog, digital, and disc transport sections) insure circuit isolation and prevent sonically harmful interactions.

Two remote controllers (one full-function tabletop controller, a second hand-held device for basic operating modes only) and a rear panel system connector facilitate comprehensive remote operation.

Thus, the KPS 25sc conclusively demonstrates the scope of Krell's vision – that penetrating ability to think within a single box.

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