



*The Leader in Audio Engineering*

# KPS 25s

**Krell Playback System™**

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

**Presenting the Krell Playback**

**Solution**



## Acrylic Transport Cover

The elegant design of the KPS 25s is highlighted by a remarkable new feature—a prismatic acrylic cover, containing an electronic LCD shutter, over the transport mechanism. This massive cover, which is piston-damped for smooth motion, isolates the transport from acoustic disturbances. The electronic LCD shutter is transparent when the transport is stopped, to allow a visual check of whether a CD is loaded. When the CD play mode is selected, the shutter protects the integrity of the data on the disc by turning opaque to prevent stray light from entering the transport mechanism.

*The KPS 25s  
flanked by two Krell  
Full Power Balanced  
650M Monaural  
Power Amplifiers.*

## Class A, Balanced, Krell Current Mode™ Analog Preamp

The KPS 25s offers advanced digital circuits and is the finest analog preamplifier Krell® has yet produced. The KPS 25s follows the Krell® tradition of employing only fully-balanced, Class A amplifier stages for all analog circuitry. These amplifiers employ Krell Current Mode™ topology to deliver exceptionally wide bandwidth with extremely low noise. This unique Krell® analog amplifier circuit topology is a vital part of the overall sonic excellence of the KPS 25s. Characterized by low impedance levels, this circuitry is perfect for driving the low-impedance volume control function and KPS 25s analog outputs.

# KPS 25s

## The Krell® Playback System™

- Premieres the world's first front-end solution for audiophile systems integrating a compact disc transport, digital-to-analog converter, and a preamplifier into one stand alone unit
- Uses a professional quality compact disc reading mechanism featuring a high power neodymium direct drive motor, a belt driven laser mechanism, and viscous damped suspension
- Features a unique implementation of a 16X oversampling digital-to-analog conversion system with two digital-to-analog converters (DACs) and Motorola digital signal processors (DSPs)
- Employs a reference quality preamplifier with fully balanced Class A stages featuring Krell Current Mode™ circuitry
- Uses a massive prismatic transport cover that automatically activates an electronic shutter to prevent light intrusion during compact disc playback
- Features three independently regulated power supplies for the analog, digital, and disc transport sections
- Includes two remote controllers as well as back panel system connectors for comprehensive remote control operation



## Unparalleled Precision and Musicality for Digital and Analog Playback

Few products command the attention of audiophiles the way that a new component from Krell® does. Each new Krell® builds on a distinguished heritage of engineering excellence, meticulous craftsmanship, and thoughtful design. And each creates a new standard of performance and quality in sound reproduction.

Many audiophiles have wondered how Krell® could improve on one

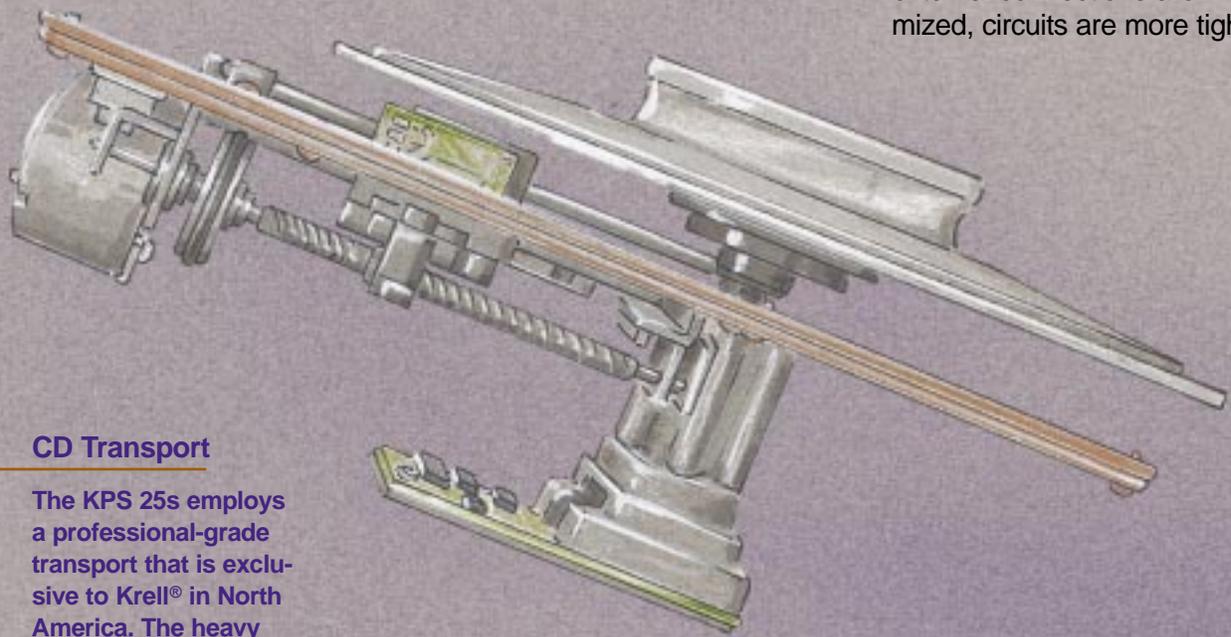
of the most desired and widely acclaimed high-end audio products—the legendary Krell® KPS 20i. The answer is the KPS 25s Krell Playback System™.

## Integration for Higher Performance

As one of the most respected manufacturers of high-end audio components, Krell® recognizes that there have to be compelling reasons—reasons that audiophiles both understand and embrace—to break with the high-end audio tradition of producing

separate components and create an integrated component such as the KPS 25s. These reasons are performance, simplicity, and efficiency.

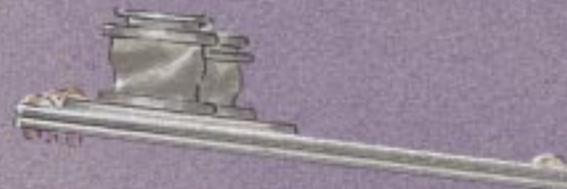
C.E.O. Dan D'Agostino has directed the Krell® engineering effort to join impressive digital and analog circuitry with an equally impressive simplicity of operation in the KPS 25s. As a result, the KPS 25s exhibits a level of design integration that represents the highest overall performance yet achieved from a compact disc playback system. Signal paths are shorter, external connections are minimized, circuits are more tightly



### CD Transport

The KPS 25s employs a professional-grade transport that is exclusive to Krell® in North America. The heavy transport is built on a massive copper plate that is isolated from the main chassis by tuned elastomer mounts. The turntable drive motor is a permanent-magnet type employing high-strength neodymium magnets in a cog-free design. The motor/turntable design has both high mass for rotational stability and high

torque for the rapid, precise control of track velocity. The laser detector/tracking system is mounted on a sled which is controlled by a belt-drive system. This design provides very high positional accuracy and eliminates servo bounce and vibration, a significant cause of data errors in ordinary transports.



coupled, and power is easier to manage. The performance benefits of this integrated design include reduced noise and distortion, improved signal timing, and better linearity. These benefits are key to the musical qualities that define superior reproduction: Revelation of musical detail, authentic tonality and timbre, accurate staging and imaging, liveliness, and immediacy. In short, the KPS 25s Krell Playback System™ provides a complete and satisfying recreation of the sound of the original performance.

## Performance in Every Detail

Superb audio performance is rarely the result of a single technical innovation or feature. Rather, it results from the careful—and artful—gathering of numerous aspects of design and construction into a whole, one in which quality is the paramount attribute and one in which simplicity and elegance are always vital components.

Dan D'Agostino has personally investigated and reviewed every aspect of the KPS 25s design for its potential to deliver the highest possible sound quality. The Krell Playback System™ is an engineering tour de force. Audiophiles will find each audition a revelation; the music infused with Krell's commitment to technology and quality.



*The KPS 25s high resolution volume control.*

## Master Clock System

**The KPS 25s employs an extremely stable, low-noise, master clock oscillator that synchronizes all of its digital circuits. All timing signals are derived from this clock and share its extremely low-jitter performance. This level of accuracy is required to take full advantage of the linearity and resolution of the DACs. The end result is superior audio signal quality.**

## High Resolution Volume Control

The KPS 25s employs a unique digitally-controlled volume control which has four complete sections operating at the same time. Two sections are needed for each channel because the analog circuitry of the KPS 25s is balanced for the lowest possible noise and distortion. The volume control function has a very low impedance design. This eliminates both the resistor noise and frequency response aberrations caused by capacitive loading which are typical of ordinary volume controls, whether active or passive. The KPS 25s volume control employs a discrete R-2R resistive ladder configuration. Volume levels are selected by complementary metal oxide semiconductor (CMOS) analog switches controlled by the KPS 25s microcontroller. Although the volume level display shows 0 to 152 discrete steps, the resolution of the control is actually far greater, providing attenuation steps between each level on the display for perfect listening level selection.

## Power Supplies

The KPS 25s has three separate power supplies, complete with toroidal transformers, rectifiers, filters, and regulators. These separate supplies power the transport assembly, the digital circuitry, and the analog circuitry to assure the maximum isolation of each section, and to prevent noise contamination through the power busses. Extra on-board regulators are used in some circuits to provide additional decoupling and regulation. A high-efficiency radio frequency interference/electro magnetic interference (RFI/EMI) filter on the AC line entering the KPS 25s prevents noise from entering or leaving the unit, making the KPS 25s a "good neighbor" to other equipment.





The KPS 25s tabletop and handheld remote controllers.

## Digital Filter, Digital-to-Analog Converters and Digital Input Decoder

The KPS 25s employs a proprietary digital interpolation filter system designed by Krell® that uses a separate Motorola DSP-56009 circuit for each channel. These Digital Signal Processor (DSP) circuits run at a clock speed of 80 MHz, which enables them to provide an unprecedented level of computation. The result is a channel data rate that yields 16X oversampling of the disc data with a resolution of 20-bits.

The 16X, 20-bit data for each channel is sent to a separate DAC board which has two modules capable of 20-bit conversions at 8X oversampling. The two converters on each audio channel's DAC board are operated in parallel, but are interleaved in time by the digital filter circuitry to achieve 16X, 20-bit conversion of compact discs. These high-resolution converters are, quite simply, the world's best.

Data from digital sources is processed and decoded by another module, which receives digital data of up to 24-bits at a data rate of up to 48 kHz. This means that the KPS 25s is compatible with professional and consumer digital audio sources, automatically adjusting to the data length/rate presented to its digital inputs. This digital receiver/decoder is characterized by its extremely low jitter and excellent waveshapes, allowing the digital filters in the KPS 25s to deliver an exceptionally clean data stream to the DAC section.

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## Integration for Easier Operation

The KPS 25s joins its impressive circuitry with an equally impressive simplicity of operation. These qualities make its advanced capabilities readily accessible to every music lover. Thanks to its carefully selected features, ergonomic controls, and remote capability, the KPS 25s enhances musical enjoyment, letting the music occupy center stage—the ultimate reason for owning a component of this caliber.

Krell® components have always been designed with simplicity as a goal. Nothing necessary missing, nothing unnecessary included. The control layout and functions

of the KPS 25s offer clear choices familiar to any user of audio gear. Compact disc transport controls are separated from analog preamplifier controls in a logical, form-follows-function manner. Two alpha-numeric displays, one for compact disc operation and one for preamplifier functions, provide complete operational information.

An advanced menu system with a large rotary control knob accesses secondary functions and assigns descriptive names to inputs for source selection. The preamplifier display and the rotary knob default to volume control, which is the most-often used control function. Full remote control operation is provided by two remote control units: A simplified handheld remote and a full function tabletop remote featuring direct access capability.

## Machined Compact Disc Clamp

The KPS 25s maintains the compact disc in perfect alignment and eliminates stray static electricity through the use of an electrolyzed metal clamp which is held to the compact disc drive spindle magnetically. The clamp is machined from solid aluminum for stiffness and low mass. The magnet exerts a strong clamping action that is greater than that provided by metal discs which clamp through mass alone.



# Specifications



PHOTOS © Zavalishin 1998

*The KPS 25s back panel.*

## Designed with the Whole System in Mind

A full complement of digital and analog inputs and outputs plus special connections for the control of other components make the KPS 25s the ideal center of an ultra high performance audio system. The KPS 25s is upgradable, extending today's high level of performance far into the future. Circuitry mounted on plug-in cards is designed to be compatible with future technology advancements and standards. Digital and analog inputs and outputs, including balanced and single-ended connections, assure high-performance compatibility with nearly every audio component. The KPS 25s also includes provisions for Krell's new CAST™ (Current Audio Signal Transmission) technology, which will interface with future Krell® amplifiers to provide unprecedented accuracy in signal transfer.

A 12VDC trigger output and an RC-5 remote control input enable connection to a variety of computer-based audio/video or whole-house system controllers. A pair of Krell® connections enables the power switching of Krell® power amplifiers and provides for future system control expansion.

## Musical Satisfaction

The look and feel of Krell® components, with their engraved panels

and buttons, complementary subtle finishes, and distinctive textures, immediately convey an unmistakable sense of quality and stability. These visual and tactile satisfactions contribute to the enduring pleasures of hearing music powerfully and convincingly presented. Music lovers who own Krell® systems experience new levels of enjoyment and appreciation each time they listen to a familiar musical source, as if they are listening to that source for the first time. The opportunity to have a listening experience such as this was one of the motivating forces for the founding of Krell® Industries, Inc. by Dan and Rondi D'Agostino, in 1980.

Combined with Krell® power amplifiers such as the Full Power Balanced 650M's, or with other state-of-the-art components, the KPS 25s is a formidable playback system. It offers audiophiles the unparalleled sound quality and system flexibility, effortless operation, and complete control that are the hallmarks of the finest sound reproduction systems—systems built around Krell® components. The new KPS 25s fully embodies the Krell® heritage of excellence, with a level of performance and sonic integrity that adds further luster to one of the world's most respected badges of audio quality—the name Krell®.

<sup>1</sup>HDCD is the registered trademark of Pacific Microsonics, Inc.

<sup>2</sup>TosLink is a trademark of Toshiba Corporation.

- FREQUENCY RESPONSE**  
0.1 Hz to 1 MHz, +0 dB, -3 dB
  - TOTAL HARMONIC DISTORTION (THD)**  
1 kHz <0.005% (balanced), unweighted  
20 kHz <0.008% (balanced), unweighted
  - SIGNAL TO NOISE RATIO**  
97 dB (balanced), A-weighted
  - CHANNEL SEPARATION**  
97.8 dB
  - DIGITAL TO ANALOG CONVERSION**  
Dual interleaved 20-bit DACs
  - DIGITAL FILTERS**  
16x oversampling employing dual Motorola 560009 DSPs, HDCD<sup>1</sup> employing Pacific Microsonics PMD 100
  - DIGITAL CLOCKING SYSTEM**  
Master clock synchronizes disc drive, laser assembly, DSP circuit, and decoder circuit
  - MAINS**  
**VOLTAGE** 100V, 120V, 200V, 220V, 240V  
**FREQUENCY** 50/60 Hz
  - OUTPUT VOLTAGE**  
13 VRMS (balanced)
  - POWER CONSUMPTION**  
90 Watts
  - IMPEDANCE**  
**INPUT** 98 k Ohms **OUTPUT** 17 Ohms
  - GAIN**  
12 dB (balanced)  
6 dB (single-ended)
  - 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/EBU 110 Ohms, 3.5V (via XLR connectors)  
2 S/P DIF 75 Ohms, .5V (via RCA connectors)  
2 EIAJ optical (via TosLink™<sup>2</sup> 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 rear panel connector)  
1 12 VDC trigger output  
1 Krell Link™ input (for future assignment)  
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**  
15.9 in., 40.3 cm
  - WEIGHT**  
Shipping 78 lbs., 35.5 kg  
Unit only 45 lbs., 20.5 kg
- All operational features, functions, specifications, and policies are subject to change without notification.