

ESOTERIC

Grandioso K1
Super Audio CD Player



Grandioso K1

Super Audio CD Player

*The supreme Super Audio CD player
reigning over all other single chassis models*



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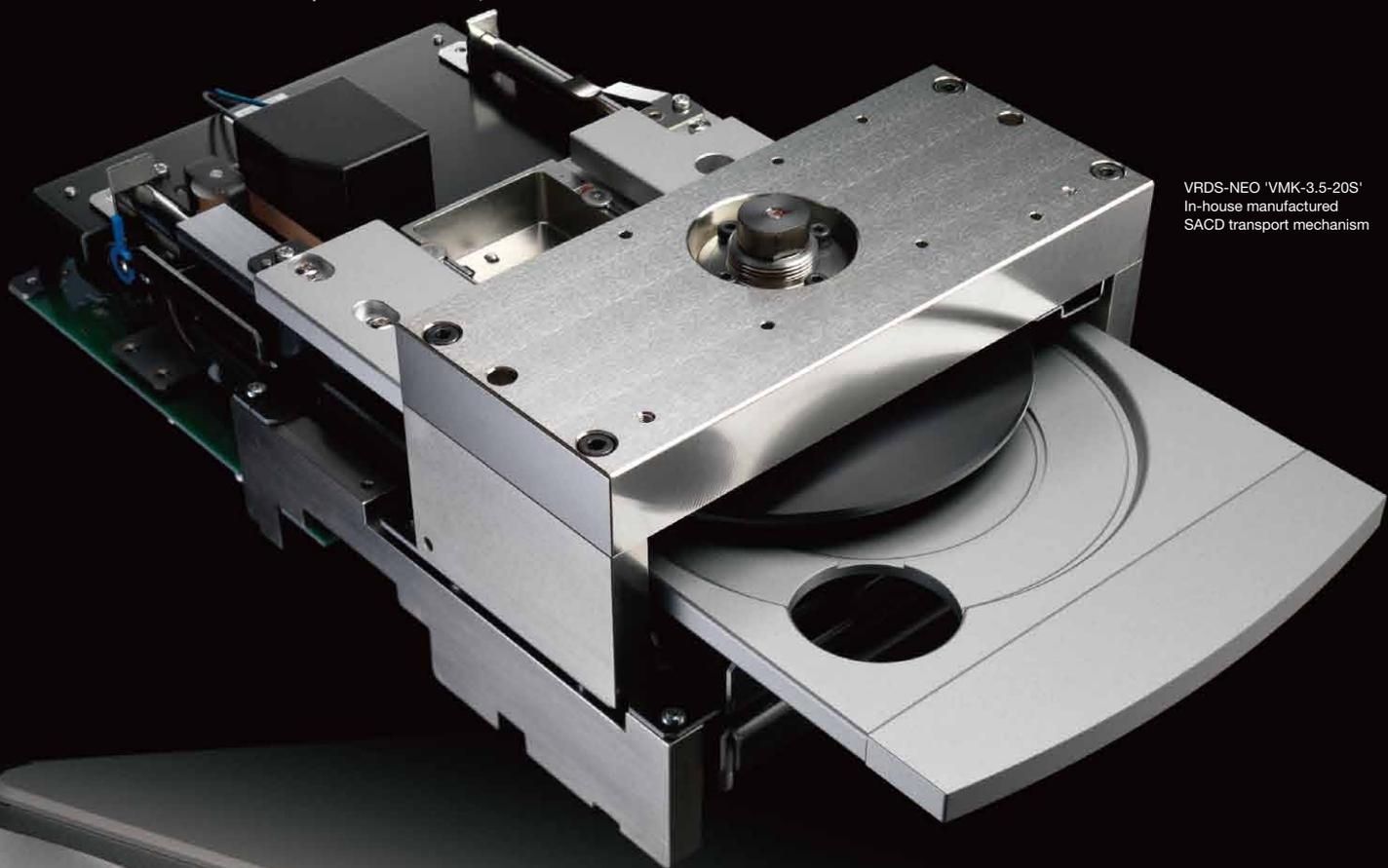
*The Grandioso series is the supreme range of Esoteric products.
The Grandioso K1 takes its place at the pinnacle of this range
as an all-in-one Super Audio CD player comprised of only
the very best in luxurious materials expected of a flagship model.
It adopts a high precision VRDS-NEO VMK-3.5-20S transport mechanism
and newly designed premium D/A converters with separate left
and right power sources for each of its eight differential circuits.
It also includes the AK4497, which is the highest performance DAC in the history of AKM*.
Esoteric has also developed "ES-LINK Analog",
an original high quality current transmission method for connecting with
the Grandioso F1 Integrated Amplifier.
Furthermore, every last corner of its electronic circuits has been refined,
such as its 35-bit D/A processing algorithm, a HCLD buffer amplifier including
125,000 μ F super capacitors,
and a high-precision clock. To put it simply,
the Grandioso K1 opens up a new horizon for digital players.*

Grandioso is an Italian for "magnificent" or "majestic".

*AKM: Asahi Kasei Microdevices Corporation

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VRDS-NEO 'VMK-3.5-20S'
In-house manufactured
SACD transport mechanism



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The Art of Mechanical Engineering

VRDS-NEO VMK-3.5-20S

The culmination of Esoteric's most advanced mechatronics know-how, the VRDS system radically improves the reading precision of Super Audio CD/CD discs by using a turntable for rotation and mechanically correcting for surface run-out. The Grandioso K1's VRDS-NEO VMK-3.5-20S drive also features two sets of specially selected high-precision ball bearings supporting a duralumin turntable constructed to micron-level accuracy, and a 20 mm-thick steel turntable bridge. The combined mechanical structure weighs an impressive 5.2 kg (12 kg including the rigid base).

The drive employs proven Esoteric technologies, including a high-flux-density magnet-driven coreless three-phase brushless spindle motor, a thread feed control derived from the thinking behind the renowned P-0, and a shaft-sliding pickup which consistently illuminates the disc with a precisely perpendicular beam of laser light.

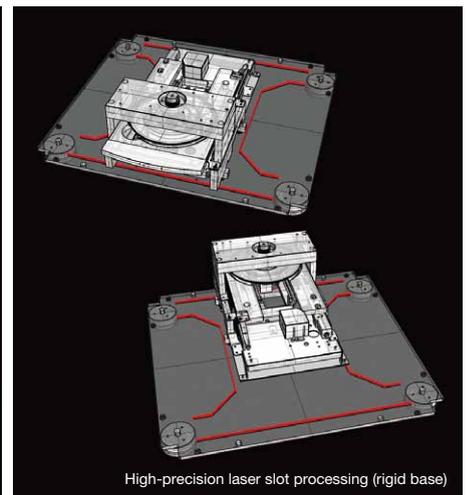
VS-DD* Spindle Servo Driver and Proprietary Toroidal Power Supply

At the heart of the VRDS-NEO drive is a spindle driven by Esoteric's proprietary VS-DD servo driver circuit. This uses a discrete three-channel amplifier to optimize the motor drive current, minimize vibration, and provide ultra-smooth spindle operation and high-accuracy servo control. The Grandioso K1 is also equipped with a proprietary toroidal power supply that greatly enhances noise isolation.

*VS-DD = VRDS Spindle Discrete Driver

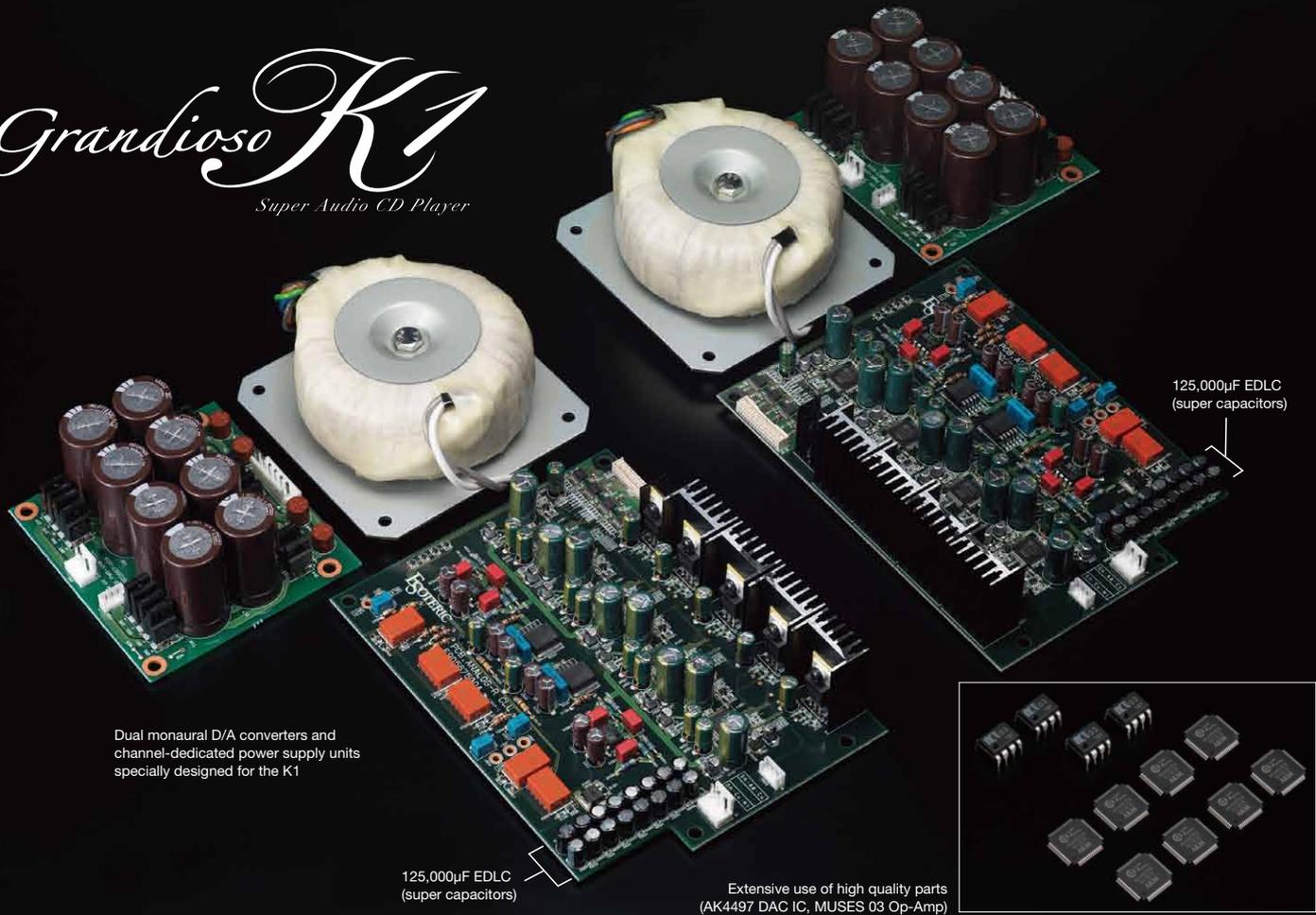
Chassis Construction and Parts Layout

The VRDS-NEO transport mechanism is located in the center where it is fixed to a 5 mm thick steel bottom chassis and supported by four proprietary pinpoint feet (patent no. 4075477). This effectively limits vibrations from the rotation mechanism. The internal structure of the chassis features a double deck with the audio boards on the top level and power supply circuits and transformers on the bottom level, which prevents magnetic flux leakage and vibrations and also shortens the power supply wiring. The Grandioso K1 contains a total of four high capacity toroidal transformers for the two monaural D/A converters, digital circuit, and "VS-DD" spindle servo driver, which enables the unit to provide the ideal power supply to each circuit block.



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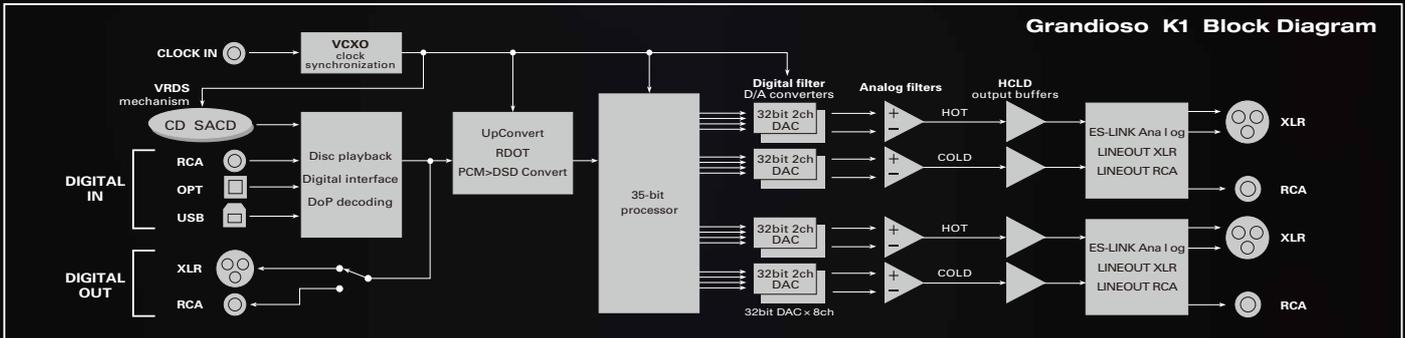
Dual monaural D/A converters and channel-dedicated power supply units specially designed for the K1

125,000µF EDLC (super capacitors)

Extensive use of high quality parts (AK4497 DAC IC, MUSES 03 Op-Amp)

125,000µF EDLC (super capacitors)

Grandioso K1 Block Diagram



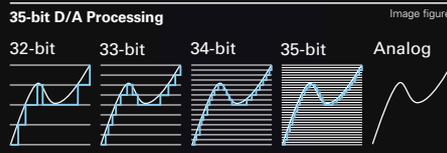
Newly Designed Integrated Dual Monaural D/A Converters for the Ultimate in Quality

The D/A converters of the Grandioso K1 feature the lavish specifications expected of a premium all-in-one model in the Grandioso line. This completely new design utilizes the finest possible materials and circuit technology available in the world today. The circuit incorporates the premium 32-bit AK4497 DAC chipset from AKM (Asahi Kasei Microdevices Corporation) in conjunction with the high-end MUSES 03 operational amplifier from New Japan Radio Co., Ltd.

Eight parallel/differential circuits drive each channel to achieve outstanding linearity and low distortion. The D/A converter features separate left and right power transformers and eight power supply regulators for each channel located directly next to each circuit to ensure a clean and highly stable power supply. The isolation of the digital circuits and analog circuits has also been made even better than before to endow listeners with vivid musical reproduction that is not only pure but also carries a superior image and depth.

35-bit D/A Processing for Outstanding Powers of Musical Expression

The Grandioso K1 combines multiple 32-bit DAC chipsets and utilizes a 35-bit D/A processing algorithm to convert the PCM signal to analog at a high resolution of 35 bits. 35-bit processing achieves an astounding resolution that is fully 2,048 times that of 24-bit processing. In the digital range, full advantage is taken of high-bit data gradation to minimize calculation errors and provide faithful conversion to analog, thereby attaining outstanding powers of expression even with extremely small music signals.



Esoteric-HCLD^{*1}: Esoteric's Proprietary Current-Enhancing Output Buffer Circuit

The ability to produce comparatively large currents and high slew rates are two of the most important factors that enable an analog output circuit to accurately transmit the wide dynamic range of a music signal without degradation. The Grandioso K1 offers the ultimate performance as a line driver by adopting high-performance elements with a high output current capacity and exceptionally fast slew rate (2,000V/µs) for excellent response speed. Two of these buffer circuits are employed per channel. By configuring them differentially to drive the XLR outputs and in parallel to drive the RCA outputs, the instantaneous output current available is maximized. Furthermore, an EDLC^{*2} super capacitor array is utilized as the power source of the buffer circuits. Its amazingly high capacity of 125,000 µF for each channel provides unwavering low-frequency ranges and enables the reproduction of musical dynamism with breathtaking reality.

^{*1}: HCLD = High Current Line Driver

^{*2}: EDLC = Electric Double-layer Capacitor

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Cutting-edge Electronics



"ES-LINK Analog" Method for High Quality Current Transmission

In addition to regular line connections (XLR and RCA), the Grandioso K1 features the new "ES-LINK Analog" transmission method developed by Esoteric. This is a current transmission signaling that utilizes the high performance of the HCLD buffer circuit and its enhanced ability to supply current at high-speed. This is the ideal analog audio transmission as it is free from impedance of signal route, thus fully maximizes the system's potential when connected to a compatible device.*

*Included in the Grandioso F1 as of September 2016. A standard balance cable (with an XLR terminal) is used for connections, but the "ES-LINK Analog" method can only be used with compatible devices since it is a proprietary transmission method.

Comprehensive D/D Conversion Compatible with a Wide Range of Sources

In addition to playback at the original sampling frequency, 2X, 4X and 8X up-conversion of the PCM digital signal is also provided.

A PCM to DSD conversion function using a unique algorithm is also included, enabling the user to select the conversion method that suits their preferences.

Digital Inputs

Three digital inputs (USB, coaxial, and optical) enable connection to a wide range of systems. Coaxial and optical inputs support DSD 2.8 MHz (DoP) input and PCM of up to 192 kHz/24-bit.

USB Support for 11.2 MHz DSD, 384 kHz/32-bit PCM, and Asynchronous Transmission

The Grandioso K1 includes a USB terminal for connecting to computers, and the driver and "ESOTERIC HR Audio Player" playback software can be downloaded from the Esoteric website free-of-charge. The K1 supports asynchronous transmission and playback at high sampling rates up to 11.2 MHz DSD and 384 kHz/32-bit PCM studio-master-quality source files. Native playback of DSD files is also supported.

High-Precision VCXO Clock

Often considered the heart of a digital player, the clock circuit supplies a high-accuracy reference clock signal to the digital circuitry. The Grandioso Custom VCXO (voltage-controlled crystal oscillator) developed in a joint effort with Nihon Dempa Kogyo (NDK) is a high-precision custom clock that adopts a large crystal element to ensure exceptional sound playback quality with excellent center accuracy (± 0.5 ppm) and extremely low levels of phase noise. The quality of this VCXO is strictly controlled, and only the selected chipset is used for the K1.

Clock Sync Function for Synchronization with External Devices

Connecting the Grandioso K1 to a high-precision master clock generator such as the Grandioso G1 allows synchronization of the unit's operation with an external clock signal, thereby enabling the quality of the system to be further upgraded. The supported input frequencies are 44.1/88.2/176.4 kHz, as well as 10 MHz and 22 MHz. Synchronization with an external clock is also available when USB input is used.

Custom Clock Input Cable with MIL Standard SMA Connector

The clock input wiring uses hardwired connection with a custom coaxial cable of the finest quality. This cable adopts a MIL-compliant gold plated SMA connector that was specifically developed for high frequency transmission and an original milled brass BNC terminal designed by ESOTERIC to achieve a secure connection, in order to minimize loss of transmission to the utmost limit.

Output Modes

The analog audio output can be switched between ES-LINK Analog, RCA, and XLR. Hot 2 or Hot 3 XLR pin assignments can also be selected. Loss in audio quality is eliminated with a non-contact system by performing phase inversion in the digital domain.



Specifications

Playable disc types

Super Audio CD, CD (including CD-R and CD-RW)

Analog audio outputs

Connectors	XLR (2 channels) × 1 pair RCA (2 channels) × 1 pair
Output impedance	XLR: 20 Ω RCA: 23.5 Ω
Maximum output level (at 1kHz, 10kΩ load)	XLR: 5.0Vrms RCA: 23.5 Ω

When Super Audio CD, XLR output

Frequency response	5 Hz to 55 kHz (−3 dB)
S/N ratio	120 dB
Distortion	0.0008% (1 kHz)

Digital audio output

XLR connector × 1	3 Vp-p (into 110 Ω)
RCA connector × 1	0.5 Vp-p (into 75 Ω)

Digital audio input

RCA connector × 1 (input impedance 75 Ω)	0.5 Vp-p
Optical digital connector × 1	−24.0 to −14.5 dBm peak
USB-B connector	USB2.0 standard

Clock sync input format

Connector	BNC
Supported input frequencies (±10 ppm)	44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz, 10 MHz, 22.5792 MHz, 24.576 MHz
Input impedance	50 Ω
Input level	Rectangle wave: equivalent to TTL levels Sine wave: 0.5 to 1.0 Vrms (50 to 75 Ω)

General

Power supply	AC 230 V, 50 Hz AC 120 V, 60 Hz AC 220 V, 60 Hz
External dimensions (W × H × D)	445 × 162 × 448 mm (17 5/8" × 6 1/2" × 17 3/4") (including protrusions)
Weight	33 kg (72 7/8 lb)

Included accessories

- Power cord × 1
- Remote control (RC-1315) × 1
- Batteries (AAA) × 2
- Felt pads × 4
- Owner's manual × 1
- Warranty card × 1



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- This product is available in three different power supply variations shown in the chart above. Make sure that the voltage shown on the rear panel matches the AC line voltage in your area.
- The shape of the AC inlet and plug of the supplied power cord depends on the voltage rating and destination country.

Please note that Esoteric products are only available from approved distributors in overseas territories. "ESOTERIC" and "VRDS" are trademarks of TEAC Corporation, registered in the U.S. and other countries. "Grandioso" is a trademark of TEAC Corporation.

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