TEAC

UD-505-X USB DAC Pre-amplifier Silver

250144

The UD-505-X is a flagship dual monaural USB DAC with an integrated fully-balanced headphone amplifier, that fuses high-end audio design concepts and TEAC's decades of audio design experience, in an A4-sized footprint. The dual mono structure processes stereo signals with higher purity, and the D/A converter section uses one ESS Technology ES9038Q2M in each of the left and right channels. This model achieves a high signal-to-noise ratio by using each DAC in mono mode.

Colour

PRODUCT DETAILS

ESS Technology ES9038 Q2M high-performance DAC supports resolutions up to 22.5MHz DSD and 768kHz/32bit PCM
We have employed one DAC chip, which is a crucial component for digital audio, in each of the stereo channels. The ESS Technology ES9038Q2M SABRE32 Reference DAC that we use has a strong reputation in the high-end audio market. Using 32-bit HyperStream® II DAC architecture and Time Domain Jitter Eliminator, which are ESS original technologies, an outstanding dynamic range is realized and linearity is increased in the D/A conversion. As a result, clear and accurate audio playback with superior.

Dual monaural circuit design and fully-balanced design
A dual monaural circuit configuration is used throughout, from the power supply (including power transformers), to the D/A converters in the digital section and the Analog output stage. From the high-performance D/A converters to the massive toroidal-core power transformers, each element is configured for single channel processing. This prevents mutual interference effects while reproducing a rich acoustic expressiveness. In addition, the Analog audio signals of both the left and right channels are processed in full balanced mode soon after the D/A converters all the way to the output terminal, contributing to an improved S/N ratio and extended dynamic range.
This allows the fantastic sense of air that Hi-Res formats possess to be processed and conveyed without any losses.

High-quality wireless audio streaming via Bluetooth®
In addition to conventional SBC and AAC codecs, the UD-505-X also supports LDAC™ (24bit/96kHz Hi-Res audio transmission), and Qualcomm® aptX™ HD, a codec that uses 24bit/48kHz format transmission. These allow you to playback playlists on your smartphone and tablet wirelessly.

Dual onboard clocks for 44.1kHz and 48kHz, and an external clock input
Instead of referencing to an unstable and noisy PC clock during USB audio playback, a more accurate and on-board clock is generated by a high-precision, low phase-noise, audio-grade crystal oscillator for USB asynchronous transfer mode. The UD-505-X accommodates two on-board clocks exclusively for

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44.1kHz and 48kHz sampling frequencies and applies the appropriate one to incoming digital signals - those that are multiples of 44.1k or 48k - to reproduce identical sound to the original by eliminating jitter effects on the audio signal. In addition, an external 10MHz clock input is also provided, to synchronize with an even higher-precision master clock generator, such as the TEAC CG-10M/CG-10M-A, for yet further upgraded audio playback with excellent sound quality.

Up-conversion up to 384kHz/32bit PCM and 24.5MHz DSD
Employing RDOT-NEO (Refined Digital Output Technology NEO), a fluency algorithm that renders digital audio signals smoothly, the UD-505-X up-converts PCM digital signals up to 384kHz/32bit PCM and 24.5MHz DSD. With the up-conversion function activated, you will hear an improvement in quality, even with music that you are familiar with.

"Bulk Pet" USB transfer technology for enhanced audio quality
When transferring large volumes of digital data for Hi-Res audio sources through USB cables using conventional isochronous transfer mode, large variations can occur in the processing loads of the sending computer and the receiving USB DAC.
This can cause sound to drop out and other problems to occur. However, with our new USB transmission technology – dubbed "Bulk Pet" – a fixed amount of data is transmitted constantly, levelling out the processing burden on both devices and contributing to stable data transmission.
Changing the processing burden on the computer directly affects audio quality so users can select the setting they prefer (from four transmission modes).

Seven types of PCM digital filter
Seven types of PCM digital filters are available in this model. This allows you to choose the best filter according to the input file format and music style. Since the filter can be changed with a single operation of the included remote control, you can easily enjoy the differences in the subtle sound nuances of each filter type. The unit can also be used with no enabled filters.

Dual high-capacity toroidal-core power transformers
The dual monaural theme continues. Two over-sized high-capacity toroidal-core power transformers are employed in the UD-505-X, supplying stable, individual current sources for each of the left and right channels. This means neither channel will be affected by changes in the power consumption of the other during digital processing.

Improved TEAC-HCLD2 enhanced-current output buffer amp circuit
We employed the TEAC-HCLD 2 for the analog output circuit. This is a further improved version of the TEAC-HCLD circuit enhanced-current output buffer amp that increases crucial current output capacity (HCLD: High Current Line Driver). This model now uses line buffer ICs with extremely high current output capacity. By using a positive-negative two-circuit structure for each channel, drive can be differential with balanced output and parallel with unbalanced output. Transmitting audio signals without degrading their dynamism becomes possible with increased current supply capacity.

TEAC-QVCS four-circuit-structure high-precision volume control newly incorporated for preamp circuits
TEAC-QVCS (Quad Volume Control System) is used for the volume circuit. This electronic volume control is a variable gain amp type comprised of four discrete circuits for left, right, positive and negative (L+, L, R+, R). By placing the variable gain amp volume control, which processes in analog, in the audio signal path on the circuit board, issues with noise resulting from diverging wiring are avoided.
Furthermore, this TEAC-QVCS enables volume adjustment in 0.5dB increments, allowing you to set the perfect volume for your audio system or headphones.

Discrete circuit design with balanced drive
The UD-505-X's headphone amplifier circuit provides balanced-drive by using the TEAC-HCLD2 circuit, – comprised of four output transistors for each left and right channel – for headphone output. With challenging 600 high-impedance headphones for example, the UD-505-X allows you to bring out the potential of these type of headphones.

Pentaconn, a single-plug connector for balanced headphone drive
In addition to the dual conventional 6.3mm (¼") TRS jacks for balanced connection, the UD-505-X employs a 4.4mm 5-pole headphone jack for balanced drive. At the 6.3mm TRS jack, you can enjoy 3 kinds of drive type, unbalanced connection to drive up to 2 sets headphones, and active-ground drive that is effective to improve the silence and present the sensitive sound, as well as balanced connection.

Active-ground drive offers a new headphone drive mode
The active-ground is a new driving mode that employs the principles of balanced connection. It

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forcefully drives the ground, by lowering the ground level to 0V, providing an ideal ground condition (rather than just connecting to the conventional ground). This means it also suppresses hum noise from the power supply and enhances the purity of silent pauses by lowering the noise floor. Subtle detail, such as the breathing of artists and the textures of sounds, will feel even more convincing.

Full-metal body for functionality and beauty
Since the entire body is constructed from metal panels that are resistant to external noise, intrusion of electromagnetic noise generated by computers and other devices is suppressed. A clean internal environment with little noise has been realized even in conditions that are difficult for audio equipment. Furthermore, 8mm-thick aluminum panels covering both sides of the all-metal chassis provide a strong and stable structure that prevents twisting and bending. Moreover, with the size of an A4 page* (viewed from above), the unit can be placed on a desk, side table or other small space.
* This excludes the connectors, knobs and other protrusions.

Symmetrically laid out XLR and RCA output jacks
The UD-505-X is equipped with both balanced and unbalanced Analog audio outputs. A pair of XLR connectors and another pair of RCA connectors - each gold-plated - are symmetrically laid out, hinting at the dual monaural arrangement inside, and allowing a wide range of possible audio configurations. A wide-spaced pitch layout for the RCA outputs accommodates professional grade plugs with large-diameter shells. The UD-505-X has a total of 5 digital inputs: USB audio, coaxial, optical on the rear panel, and a combination jack on the front panel (for coaxial and optical, supporting PCM 24bit/192kHz and DSD64 (2.8MHz) in DoP format).

Newly-developed Stressless Foot design
Our newly-developed original Stressless Foot design with three support points enables stable placement of the unit so that it is not impacted by slight irregularities in the surface beneath it. Compared to the original feet used in previous designs, these feet are only partially fixed to the chassis. This design was developed based on the concept that by allowing the feet to vibrate freely, more natural sound reverberations could be achieved. The tops of the conical feet, which are made of machined steel, are attached so that they hang from the bottom of the chassis and swing freely when the unit is lifted. While maintaining a sense of placement like that of the pin-point spiked feet used by previous models, this design enables more natural rich reverberations.

Semi-floating design Top Panel
A semi-floating structure is newly used for the top panel. It has achieved a sound with an excellent sense of openness.

Free TEAC HR Audio Player software for DSD512 playback on both Windows and Mac
The next-generation Hi-Res formats, DSD512 (22.5MHz) and PCM 768kHz/32-bit are supported via the TEAC HR Audio Player software for Windows and Mac. This software guarantees the best available playback quality with any combination of audio format and computer configuration via a single USB cable. All the user has to do is choose the UD-505-X from the pull-down menu showing target output devices. The TEAC HR Audio Player is downloadable from TEAC's web site, and is completely free to use.

Features at a glance

- Hi-Res audio playback supporting DSD512 (22.5MHz) and PCM 768kHz/32bit PCM
- An ESS Technology ES9038Q2M converter each for left and right channels
- Dual on-board clocks for 44.1kHz and 48kHz frequencies
- 7 types of PCM digital filters
- Up-conversion up to 24.5MHz DSD and 384kHz/32bit PCM
- 10MHz external clock input
- Bluetooth® receiver supporting LDAC™, Qualcomm® aptX™ HD, AAC and SBC
- Original TEAC-HCLD2 enhanced-current output buffer circuit
- Dual monaural circuit design
- Dual toroidal-core power transformers for each channel
- TEAC-QVCS quad volume control system
- 4.4mm 5-polar Pentaconn*1 jack and dual 1/4” (6.3mm) TRS jacks for balanced and active-ground drives
- Full-dot OLED display with dimmer function
- Newly-developed “Stressless Foot” design with three support points
- Semi-floating design Top Panel
- Bulk Pet*2 USB transferring technology with four transfer modes for various sound characters
- Free TEAC HR Audio Player for Windows/Mac

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*1 ”Pentaconn” is a registered trademark of NIPPON DICS Co., Ltd., complies with the RC-8141C JEITA standard.
*2 ”Bulk Pet” is a registered trademark of Interface Corporation.

What's in the box

- Power cord
- RCA mini plug adapter cable
- Remote control(RC-1330)
- 2 AAA batteries for remote control
- 3 feet cushions
- Owner's Manual(with warranty)

Specs

Product Attributes

EAN:	4907034223787
Manufacturer number:	UD-505-X/S
Product weight:	4.6 kilograms
Pieces per master carton:	1 Piece

Audio Inputs

Coaxial:	2
Input level & impedance coaxial:	0.5Vp-p 75
Optical/Toslink:	2
Input level optical:	-24.0 to -14.5dBm peak
RCA:	1
Input level & impedance RCA:	130mV 24k
BNC:	1
Impedance & frequency BNC:	50 10MHz
USB 2.0:	1
USB-B:	1
Wireless:	Bluetooth

Dimensions and Weight

Product height:	8.45
Product width:	29
Product length:	24.87
Product weight:	4.1

Amplification

THD:	0.002
S/N ratio:	110

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Frequency response:	10-80000

Audio Outputs

Power & impedance 4.4mm jack:	700mW + 700mW (into 32)
Power & impedance 6.3mm jack:	700mW + 700mW (into 32) 350mW + 350mW(into 32×2) 500mW + 500mW (into 32×1) Active ground: 500mW + 500mW (into 32)
Output level & impedance RCA:	2.0Vrms (1kHz full scale into 10k when set to fixed (0dB)) 4.0Vrms (1kHz full scale into 10k when set to fixed (+6dB)) 6.0Vrms (1kHz full scale into 10k when set to variable) 150
Output level & impedance XLR:	2.0Vrms (1kHz full scale into 10k when set to fixed (0dB)) 4.0Vrms (1kHz full scale into 10k when set to fixed (+6dB)) 12.0Vrms (1kHz full scale into 10k when set to variable) 188

Audio Codecs & Formats

Bluetooth codecs:	AAC SBC aptX aptX HD LDAC
Bluetooth version:	4
Max. Bluetooth pairings:	8

Energy Management

Power consumption:	0.4-18

Control Methods

Controls:	Remote Control On Device

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