





NT-505 USB DAC Network Preamplifier, Silver

156418

SRP CHF 1'899.00

Dual monaural USB DAC/Network Player supporting DSD512 and PCM32/768

Colour





PRODUCT DETAILS

Overview
The NT-505 is a flagship dual monaural USB DAC with versatile network playback capabilities. It successfully incorporates the latest network technologies, along with TEAC's decades of accumulated audio design experience, in an attractive package with an A4-sized footprint. Like its predecessor (the NT-503) it employs a dual monaural circuit design to process audio signals with even greater purity, with the latest VERITA AK4497 DAC chip used on each of the two channels. This improves the S/N (signal to noise) ratio by processing each channel individually in monaural mode, as well as delivering DSD512 (22.5MHz) native and 768kHz/32-bit PCM playback capabilities. The analogue section, which is one of the keys to sound quality, includes four TEAC-HCLD buffer amp circuits that allow different drive modes, – fully-balanced drive for balanced output, and parallel drive mode for unbalanced output – to achieve enhanced acoustic expression. On the network audio side, the NT-505 supports high-quality music subscription services, namely TIDAL and Qobuz, and is Roon Ready. There's also a built-in MQA decoder, and you will enjoy unlimited music content on the Internet thanks to its high-quality digital and analogue processing technologies. In addition to a wide range of digital and analogue inputs, a Bluetooth® receiver supporting LDAC™ and Qualcomm® aptX HD™ allows you to stream high-quality audio wirelessly from your smartphone to this flagship USB DAC. The NT-505 is a compact and high-spec USB DAC and network player that supports the latest HiRes formats and online music subscription services.

High-performance VERITA AK4497 DACs supporting DSD512 and PCM32/768
The NT-505 employs the latest VERITA AK4497 (developed by Asahi Kasei Microdevices) on each of the left and right channels. It is a highly-regarded high-end audio DAC, and supports DSD512 (22.5MHz) and 768kHz/32-bit PCM formats, achieving industry-leading ultra low distortion levels. OSRD (Over-sampling Ratio Doubler) technology, meanwhile, significantly reduces out-of-band noise. As a result, the NT-505 has the refinement necessary to make the most of Hi-Res formats, successfully processing information that lies outside the audible range.

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 analogue output stage. From the high-performance VERITA AK4497 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 analogue 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

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fantastic sense of air that HiRes formats possess to be processed and conveyed without any losses.

Supports TIDAL and Qobuz music subscription services, and is Roon Ready
Connecting to your home network via a LAN cable, the NT-505 allows you to access Hi-Res music libraries on available music servers and computers, as well as hundreds of millions of CD-quality tracks on Internet via music subscription services like TIDAL and Qobuz. The NT-505 is also a Roon Ready product that enables Hi-Res audio streaming thanks to its high-performance D/A converters.

MQA decoder for master quality streaming
In order to achieve an analogue waveform closer to the original signal, the NT-505 supports MQA decoding while also supporting high sampling rate Hi-Res formats like DSD512 and PCM32/768. The MQA decoder is a totally new technology that controls analogue waveforms with excellent precision (as fine as 5 microseconds) and it reproduces sound in a manner that is perceived to be as close as possible to the original (to human hearing). Furthermore, a high-efficiency compression algorithm makes huge Hi-Res audio files compact in size, so you will be able to enjoy Hi-Res audio sources regardless of the speed of your Internet connection.

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

Hi-Res audio playback from USB flash drive
The USB port on the front panel allows you to playback Hi-Res audio formats including DSD128 (5.6MHz) and PCM 24/192.

Dual onboard clocks for 44.1k 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 NT-505 accommodates two on-board clocks exclusively for 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 synchronise with an even higherprecision master clock generator, such as the TEAC CG-10M, for yet further upgraded audio playback with excellent sound quality.

Up-conversion up to 384kHz/32-bit PCM and 24.5MHz DSD
Employing RDOT-NEO (Refined Digital Output Technology NEO), a fluency algorithm that renders digital audio signals smoothly, the NT-505 up-converts PCM digital signals up to 384kHz/32-bit 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).

More digital filters than previous model
On the NT-505, there are two types of DSD filters and another five types of PCM digital filters, allowing you to apply the filter that best matches the file format or type of music you’re listening to. The filter can be changed at the touch of a button on the remote control, allowing you to enjoy the different sonic nuances of each filter.

PCM digital filters

- Sharp Roll Off: FIR filter with a steep roll-off that sharply cuts signals outside the audio band
- Slow Roll Off: FIR filter with a slow roll-off that gently cuts signals outside the audio band
- Short Delay - Sharp: Short delay filter with a steep roll-off that sharply cuts signals outside the audio band

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- Short Delay - Slow: Short delay filter with a slow roll-off that gently cuts signals outside the audio band
- Low Dispersion: Short delay filter with low dispersion that cuts signals outside the audio band.
- Off

DSD digital filter

- Narrow: Cut-off frequency of 39kHz (at 2.8M), 78kHz (at 5.6M), 156kHz (at 11.2M) or 312kHz (at 22.5M)
- Wide: Cut-off frequency of 76kHz (at 2.8M), 152kHz (at 5.6M), 304kHz (at 11.2M) or 608kHz (at 22.5M)

Isolated digital and analogue sections
In order to suppress interference between the digital and analogue sections, the NT-505 employs an independent power supply and ground circuit, so eliminating cross-interference in the signal path where digital and analogue sections connect. A digital isolator is employed at the input section to eliminate noise originating from any connected digital sources, including noise that is generated from the computer via USB, power line and the ground path. This isolation circuit also makes a significant improvement in the signal-to-noise ratio as well as the final sound quality.

Dual high-capacity toroidal-core power transformers
The dual monaural theme continues. Two over-sized high-capacity toroidalcore power transformers are employed in the NT-505, 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.

Unique TEAC-HCLD output buffer amp circuits
At the heart of analogue section are TEAC-HCLD (High Current Line Driver) buffer amp circuits, designed to enhance current supply. Each channel employs two identical buffer amps that process differential drive for balanced output, and parallel drive for unbalanced output. By increasing the current supply to the buffer amp section, the analogue audio signal is passed to the next step without any loss of dynamism.

TEAC-QVCS high-precision volume control with four circuits
The NT-505 is also a superb pre-amplifier, thanks to its combination of outstanding analogue processing performance, a wide range of analogue/digital inputs, and fixed/variable level XLR (balanced) and RCA (unbalanced) outputs. These allow you to build a fully-fledged hi-fi system around the NT-505 with a stereo amplifier/pair of monaural power amplifiers and floorstanding speakers, or a simplified system based on a pair of active speakers The TEAC-QVCS (Quad Volume Control System) is a precise volume control design incorporated in the pre-amp section. This circuit employs four sets of variable gain-amps controlling volume for left, right, positive and negative (L+, L–, R+, R-). Each variable gain-amp is located on a simplified signal path which helps eliminate interference noise by creating a shorter signal path. In addition, the TEAC-QVCS provides precise volume control in 0.5dB steps in ‘dB’ display mode, or 100 steps in ‘step’ display mode.

Ground-separate headphone drive mode
Applying TEAC-HCLD (which comprises four output transistors in each of the left and right channels) for headphone amplification delivers an excellent sound quality via the conventional 1/4” stereo TRS jack. Furthermore, by driving these transistors in parallel when a single-ended headphone is connected, stronger driving power than conventional single-ended headphone amps provide can be delivered to the headphones. In conventional headphone listening, it is configured to operate in Class-A, despite nominally being a Class-AB amplifier. The NT-505 allows you to bring out the potential of any type of headphones including 600 highimpedance examples. Moreover, the ground-separate drive mode completely separates the grounds of the left and right channels from the amp section to the output jacks. Channel separation, which is crucial for headphone listening is significantly improved, achieving a clear soundstage with good transparency.

Full-dot OLED display with excellent visibility
A high contrast full-dot OLED (organic EL display) with 4-step dimmer is employed, for excellent visibility. Even better, a highly legible, large font size allows you to easily verify the volume level, input source and other information, even when sat at a distance.

Full-metal body for functionality and beauty

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Just as with the successful Reference 503 series, the NT-505 employs aluminum-alloy panels - including iconic side guard-bars - and a robust metal chassis with a compact A4-size footprint* that completely matches with the 500 series and the new CG-10M master clock generator. The full metal construction isn’t just beautiful, it’s also functional. It’s highly effective at isolating the internal circuits from electromagnetic noise.

Symmetrically laid out XLR and RCA output jacks
The NT-505 is equipped with both balanced and unbalanced analogue 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 NT-505 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 24/192 and DSD64 in DoP format).

Main functions

- Hi-Res audio playback supporting DSD512 (22.6MHz) and PCM 768kHz/32-bit PCM
- Dual monaural circuit design with a high-end AKM VERITA AK4497 DAC on each channel
- Supports MQA decoder and music subscription services (TIDAL and Qobuz) and is Roon-ready
- DSD128 (5.6MHz) and PCM 192kHz/24-bit Network streaming from NAS/PC
- 5 types of PCM digital filters and 2 types of DSD digital filters
- Up-conversion up to 24.5MHz DSD and 384kHz/32-bit PCM
- Dual on-board clocks for 44.1kHz and 48kHz frequencies, and 10MHz external clock input
- Bluetooth® receiver supporting LDAC™ and Qualcomm® aptX™ HD
- TEAC-HCLD output buffer circuit and TEAC-QVCS volume control for high quality sound
- “Bulk Pet” USB transfer technology, with four transfer modes to vary sound character
- Free TEAC HR Audio Player and TEAC HR Streamer app

For more specifications, see the datasheet in the downloads tab.

Included accessories

- Power cord
- RCA mini plug adapter cable
- Remote control
- 2 AAA batteries for remote control
- Owner's Manual

Specs

Product Attributes

EAN:	4907034221813
Manufacturer number:	NT-505-S
Product weight:	5.3 kilograms
Pieces per master carton:	28 Piece

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