

Q & A

FREQUENTLY ASKED QUESTIONS



TB-50

TUBE PHONO EQUALIZER

INTRODUCTION

Introduction

The DS Audio TB-50 is a hybrid phono equalizer developed exclusively for DS Audio optical cartridges. It brings together the precision of solid-state amplification with the harmonic richness of vacuum tubes in a single unit. This document answers the questions we most frequently receive from customers, dealers, and reviewers about the TB-50, in Q&A form.

Two souls. One music.

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Questions & Answers

Q 01

What is the TB-50?

The TB-50 is a hybrid phono equalizer developed exclusively for DS Audio optical cartridges. RIAA equalization and amplification are handled entirely in solid-state circuitry, while the final output stage passes through a vacuum tube buffer — pairing precise signal amplification with the harmonic richness only tubes can deliver.

Q 02

What does "Two Souls. One Music." mean?

The tagline "Two Souls. One Music." expresses the TB-50's hybrid design philosophy. The precision of solid-state and the emotional warmth of vacuum tubes — two different technologies — are not set in opposition but united into a single phono equalizer. Each technology retains its own distinct character, yet what reaches the listener is a single, seamless flow of music. This is the philosophy embodied in that phrase.

Q 03

How does the TB-50 differ from the TB-100? Is it a lower model?

The TB-100 is a pure tube design, embracing the emotional, classic sound of vacuum tubes. The TB-50, by contrast, is a hybrid design: the amplification stages are solid-state, with a vacuum tube buffer placed only in the final output stage. The result is a sound with greater speed and clarity than the TB-100, while retaining the tonal color of vacuum tubes — the best of both worlds. The two are not positioned as upper- and lower-tier models, but as different sonic directions.

Q 0 4

Who is the TB-50 for?

The TB-50 is particularly recommended for:

- Owners of DS Audio optical cartridges who wish to incorporate the emotional character of vacuum tubes
- Those who prioritize responsiveness and speed over the sound of pure tube designs
- Those attracted to the sonic direction of our flagship TB-100 but seeking a more accessible price point
- Those who appreciate the balanced expression made possible by hybrid design

It is also well suited to those building a DS Audio optical cartridge system for the first time, as an option that raises the overall integrity of the system.

Q 0 5

What is a hybrid configuration? Why combine solid-state and vacuum tubes?

The TB-50 is designed as a hybrid phono equalizer. All signal amplification including RIAA equalization is performed by solid-state circuitry (transistors and op-amps), while a vacuum tube buffer is placed only in the final output stage. This structure is based on a clear design principle: amplification and coloration are treated as separate processes.

Solid-state amplification exceeds vacuum tubes in frequency response accuracy, response speed, and S/N ratio — qualities that contribute directly to sound quality in processes requiring precision such as RIAA equalization. Vacuum tubes, on the other hand, offer irreplaceable qualities in harmonic richness and emotional expression.

The TB-50 assigns each technology to the domain where it excels, achieving both precision and emotion in a single unit.

Q 0 6

Which vacuum tubes does the TB-50 use? Are they user-replaceable?

The TB-50 uses ECC82 (12AU7) vacuum tubes — the same as our flagship TB-100. Unlike the TB-100, however, the TB-50 does not require matched pairs and does not raise microphonics concerns, so replacement can be performed by the user. Any commercially available ECC82 (12AU7) tube may be used.

Q 0 7

What transistors are used in the input stage?

The current-transmission stage uses low-noise transistors made in Japan. The amplification stage is built on an op-amp configuration.

What are current-drive and current-transmission?

Given the output characteristics of DS Audio optical cartridges, current-transmission is the ideal method of connection. The TB-50 input stage is designed to receive the cartridge signal not as voltage but as current.

This approach offers two advantages. First, the influence of cable capacitance and contact resistance is minimized, preventing degradation of the musical information arriving from the cartridge. Second, the wide bandwidth inherent to the optical cartridge is fully drawn out.

"Current-drive and current-transmission" is an approach that more fully unlocks the potential of the optical cartridge.

Q 0 9

Is the TB-50 exclusively for optical cartridges? Can it be used with other cartridges?

The TB-50 is a phono equalizer designed exclusively for DS Audio optical cartridges. It cannot be used with MM or MC cartridges.

This is because optical cartridges provide amplitude-proportional output, whereas MM/MC cartridges provide velocity-proportional output. The RIAA correction circuitry required is fundamentally different. In addition, power for the LED in the optical cartridge is supplied from the equalizer side — another way in which its operation differs from conventional phono equalizers.

We recommend the TB-50 to draw out the full potential of a DS Audio optical cartridge.

Q 1 0

Does the TB-50 have XLR (balanced) output?

No. The TB-50 has RCA (unbalanced) output only.

Q 1 1

What are the output impedance, input sensitivity, and connection method?

Main specifications:

- Rated output voltage: 500 mV (1 kHz)
- Output impedance: approximately 700 Ω
- Input/Output terminals: RCA
- Dimensions: W420 × H120 × D320 mm (including terminals)
- Weight: 11.3 kg

For connection: run RCA from your DS Audio optical cartridge into the TB-50, then connect the TB-50's RCA output to the input of your preamplifier or integrated amplifier.

Q12

How is the tube illumination adjusted?

The TB-50 features continuously adjustable tube illumination. A control on the rear panel varies the brightness smoothly, from minimum to maximum intensity.

This is not a purely decorative feature but a practical one, allowing the tubes' visibility to be balanced with your listening environment. Lower the brightness in a dim listening room; raise it in a brighter room or when a visual accent is desired — a way of tailoring the amplifier to your listening style.

Q13

What is the tube life and when should they be replaced?

The typical lifespan of an ECC82 (12AU7) tube is approximately 5,000-10,000 hours of normal use. At 3-4 hours per day, this corresponds to roughly 4-9 years of service.

As an indication that replacement is due, please note the following changes:

- The definition of the sound softens; freshness seems reduced
- The weight of the low frequencies or the extension of the highs seems diminished
- The unit takes longer to warm up after being powered on than it once did

Since the TB-50 does not require matched pairs, replacement can be performed by the user. Obtain a commercially available ECC82 (12AU7), power off the unit, and allow it to cool completely before replacing.

Q14

What is the price, release date, and how can I purchase the TB-50?

The TB-50 will be released in July 2026 through the DS Audio dealer network. Suggested retail price is approximately US\$6,000-7,500. Final pricing varies by region according to local VAT and other taxes.

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