

THÖRESS

Hybrid Triode . Mono . Power Amplifier

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"EHT Monoblock"



PRODUCT DESCRIPTION

THÖRESS is pleased to announce the introduction of the Hybrid Triode Mono Amplifier (EHT Monoblock), our latest achievement. The most powerful amplifier model of our product line provides 30, 40 or 50 watts of output power into a 8, 6 or 4 ohm load respectively, combined with very low output resistance (high damping factor). Such providing excellent drive capability for loudspeakers with medium to low efficiency or with critically low impedance which may present a challenge for our all-tube single-ended triode amplifier models. While offering the same level of ultimate sonic excellence - yet without involving exotic and costly power tubes!

The Amplifier is built with meticulous hand construction using our proven point-to-point wiring techniques, whereas much care has been taken in arranging each aspect of the internal construction to ensure low noise performance, ease of service and the highest reliability for many years to come. The EHT Mono Amplifier is an ultimate component in every sense and the perfect complement to our Dual Function Amplifier or Full Function Preamplifier. Particularly when combined with our under-hung voice-coil 1D66 or horn based 2CD12 loudspeaker the sonic presentation of the EHT Mono Blocks is of the utmost refinement and will therefor certainly meet the expectations of even the most critical and experienced music lover.

EHT TOPOLOGY

The amplifier is based on a unique minimalist single-ended zero-feedback vacuum tube MOSFET hybrid topology which we call EHT Topology (E/intakt-H/ybrid-T/riode, single-ended hybrid triode). Deliberately ignoring the fact that many music lovers persistently believe in the myth that balanced technology (and the associated XLR connectors and cable configuration) is generally superior over single-ended concepts. Readers who want to learn more about our view on balanced techniques and our general design approach are encouraged to read the paper entitled THÖRESS *Behind the Curtain*, available on request.

The EHT topology consists of a single-ended triode gain stage (6J5GT or 7A4 vacuum tube) followed by a unity gain MOSFET output stage also operated in single-ended (class-A) mode with high idle current. In order to obtain the relatively high power output with lowest possible distortion it proved advantageous to place an additional (very powerful) unity-gain vacuum tube buffer (12HG7 power pentode operated in triode mode) in between the triode gain stage and the output stage. The 6J5GT/7A4 tube is a medium-gain octal/octal base triode with fairly low transconductance from the early times of tube electronics, whereas the 12GN7 is a rather modern (all-glass) high transconductance power tube with high gain capabilities, making it an ideal choice for buffer applications. Both tubes are unarguably among the most linear amplification devices ever developed in the history of electronic technology and as such are a perfect choice in the context of minimalist zero-feedback schematics. Basic analysis easily shows that...

The EHT topology represents the PUREST form of all possible single-ended triode power amplifier configurations!

Specifically, it can be shown that a higher output power can be more easily obtained with the EHT than with an all-tube amplification principle, without compromising sound quality. Simply, because in the former case the typical vacuum tube impedance matching output arrangement (power tube driven output transformer with high step-down ratio) can be omitted. Therefore, the driver voltage swing required for a specific power output is up to 10 times (!!!) lower for the EHT configuration compared to an all-tube topology, resulting in a proportional reduction of non-linear distortion. This crucial insight led us to the design of the EHT Mono Amplifier (and the EHT Integrated Amplifier).

The EHT topology allows to fully exploit and mate the most desirable characteristics of both vacuum tubes and solid state devices determined by their very nature. Despite its elegance and extremely high sonic capability, the EHT concept has never been utilized in a serial audio product before, as far as we know. Probably on account of its low power efficiency and because its implementation is rather tricky.

STABILITY

The EHT Mono Amplifier operates with impeccable thermal stability and is fully short-proof at the output without the aid of any kind of (sound degrading) protection circuitry. Moreover, a switch-on delay module (another protective feature often found in commonly constructed solid state or hybrid amplifiers) is also omitted because no disturbing noise or harmful signal is developed at the output when the amplifier is powered on or off.

GAIN & BASS BOOST SELECTOR

The EHT Mono Amplifier allows for on-the-fly adjustment of the gain (input sensitivity) in 7dB-steps by means of a 6-position rotary switch on the rear panel near the input jack. The (voltage) gain is

4dB (1.5-times) , 11dB (3.5-times), 18dB (8-times) and 25dB (20-times)

when the switch rests in position 1, 2, 3 and 4 respectively (neutral tonality (flat frequency response)). Position 5 and 6 are assigned with bass boost presets. Summarizing, the mapping between selector positions, gain and sound effects is given by the chart below.

pos1: 4dB gain (1.5-times).

pos2: 11dB gain (3.5-times).

pos3: 18dB gain (8-times).

pos4: 25dB (20-times), maximum gain.

pos5: bass boost style-1.

pos6: bass boost style-2.

The gain selector enables the user to match the gain of the power amplifier with the gain of the line device with respect to the efficiency of the loudspeaker. Optimal gain matching between these components is highly desirable for two reasons. At first, in a matched scenario the idle noise of the preamplifier remains inaudible even in the context of highly efficient loudspeakers. Secondly, the volume control knob can be operated at a higher angle of rotation and such allows for conveniently fine volume adjustment. Optimal gain matching is attained when the volume control on the line device in average rests near the middle position for a convenient listening loudness.

The bass boost functions can be applied for a variety of applications. For equalizing loudspeaker components with slim bass response or limited bass extension. For adjusting the bass response of the system to the acoustic conditions of the listening environment (small loudspeakers in large rooms!). For restoring tonal imperfections of the listening program (often given by a lack of bass extension). Or simply for switching to a full-bodied presentation if one is in the mood for listening to music in a non-neutral, enriched and laid back way. Notably, the bass boost functions act in a much more subtle way than common bass boost facilities and do not rely on clumsy and sound degrading conventional tone control circuitry. Both functions are realized by interposing solely one additional capacitor (per channel) to the neutral mode circuit!

MAINS TRANSFORMER

The EHT Mono Amplifier is equipped with a proprietary mains transformer produced in-house to ensure the highest possible quality and reliability. This part features a

highly elaborated dual-coil winding structure on a large tape wound cut core (C-core) and has been optimized for low body noise emission and low leakage. Nevertheless, it is mounted to the amplifier chassis via isolation elements in order to eliminate even the slightest interference of residual transformer vibrations with the circuit. Since the mains transformer is produced in-house we can easily built transformers for all kinds of mains voltages on demand, for example 100Vac (Japan), 120Vac (USA, Canada), 220Vac (South Korea, China, Thailand, Indonesia), 240Vac (UK) or 245 Vac (Australia).

FEATURE OVERVIEW

- Vacuum Tube MOSFET Hybrid Power Amplifier offering 30, 40 or 50 watts of output power into a 8, 6 or 4 ohm loudspeaker load respectively, utilizing two vacuum tubes (6J5GT or 7A4 and 1x12HG7).
- Ultimate sonic excellence on par with no-compromise all-tube single-ended triode amplifiers, without involving exotic and costly power tubes.
- Excellent driving capabilities for critical loudspeaker loads due to very low output impedance (high damping factor).
- Unique zero-feedback EHT schematic: single-ended triode gain stage followed by a unity-gain vacuum tube buffer driving a unity-gain single-ended MOSFET output stage operated (class-A) at high idle current.
- Total avoidance of sound degrading protection circuitry.
- On-the-fly selectable gain via 6-position rotary switch on the rear panel, 2 of which positions are assigned with subtle bass boost presets.
- High grade electrolytic capacitors made in Germany in the power supply.
- Low noise dual-coil C-Core mains transformer made in-house for 230Vac (115Vac via jumper setting), 100Vac (Japan), 120Vac (USA, Canada), 220Vac (South Korea, China, Thailand, Indonesia), 240Vac (UK) or 245 Vac (Australia).
- Full hand construction, point-to-point wiring throughout.
- Nonmagnetic aluminum casework, front and rear panel with anodized printing, powder-coated lids.
- Dimensions 434x454x184 mm, 184=20 (feet)+134+30 (tubes over case), 454=434+20 (speaker binding posts), weight 15Kg.
- Dimensions of the shipping crate: 650 x 650 x 350 mm.



THÖRESS...

**A Tribute to Professional Audio Components
from the Golden Age of the Electronic Tube !**

