

# THÖRESS

## Hybrid Triode . Integrated Amplifier

=====

### "EHT Integrated"



## PRODUCT DESCRIPTION

Our Hybrid Triode Integrated Amplifier (EHT Integrated) offers 2x20 watts of output power into a 6 ohm load 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 without involving exotic costly power tubes.

The amplifier comprises 4 inputs (RCA jacks) with equal gain status selectable via rotary dial. Furthermore, the amplifier features a proprietary remote volume control based on high grade motor-driven dual-potentiometer presented with typical THÖRESS style and attention to detail. The potentiometers are made to our specifications for low angle sensitivity (conveniently fine volume adjustment) by ALPS in Japan. Each individual part is selected from a large production batch for exceptionally good channel balance by careful measurement (0.3dB tolerance).

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 Integrated is an ultimate component in every sense and as such a perfect complement to our Parametric Phono Equalizer (Phono Enhancer). Particularly when combined with our under-hung voice-coil 1D66 or horn based 2CD12 loudspeaker the sonic presentation of the amplifier is of the utmost refinement and will 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 (THÖRESS - Behind the Curtain) available on request.

The EHT topology consists of a single-ended triode gain stage (6J5GT,12J5GT or 7A4 vacuum tube) followed by a unity gain MOSFET output stage also operated in single-ended (class-A) mode with high idle current. Basic analysis easily shows that...

**The EHT principle 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 fully omitted. Therefor 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. In fact this very crucial insight led us to the design of the EHT Integrated (and the EHT Mono Amplifier).

The EHT topology allows to fully exploit and mate the most desirable characteristics of both vacuum tube 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 Integrated 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.

## BASS BOOST FUNCTIONS

The EHT Integrated Amplifier MKII (launched in October 2022) includes two novel bass boost presets selectable via a 3-position toggle switch (B1 boost style-1, B2 bass boost style-2). When the switch rests in middle position the tonality of the amplifier is neutral (flat frequency response).

The bass boost functions are useful 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 acoustical 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 more full-bodied presentation if one is in the mood for listening to music in an 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 Integrated 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 on a large tape wound cut core (C-core) and has been optimized for low body noise emission and low leakage. Nevertheless, the mains transformer is mounted to the 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 build transformers for all kinds of mains voltages on demand, for example 100Vac (Japan), 220Vac (South-Korea, China, Thailand, Indonesia) or 245Vac (Australia).

## FEATURE OVERVIEW

- Vacuum Tube MOSFET Hybrid Integrated Amplifier with 20 watts of output power per channel (into a 6 ohm load).
- Driving capability for critical loudspeaker loads due to very low output impedance (high damping factor).
- Ultimate sonic excellence on par with no-compromise all-tube single-ended triode amplifiers, yet without involving exotic and costly power tubes.
- Unique minimalist zero-feedback EHT schematic: single-ended triode gain stage (6J5GT tube) driving a unity-gain MOSFET output buffer operated in single-ended (class-A) mode with high idle current.
- Total avoidance of protection circuitry.
- 4 line level inputs (2x4 RCA jacks) with equal gain manually selectable via rotary dial.
- Remote volume control via high-grade motor driven dual potentiometer with excellent channel balance and low angle sensitivity (for conveniently fine volume adjustment).
- High grade electrolytic capacitors made in Germany in the power supply.
- Low noise low leakage dual-coil C-Core mains transformer made in-house for 230Vac (115Vac via jumper setting), 100Vac (Japan), 220Vac (South-Korea, China,

Thailand, Indonesia) or 245Vac (Australia).

- Full hand construction, point-to-point wiring throughout.
- Non-magnetic aluminum casework, anodized printing on front and rear panel, powder-coated lids.
- Dimensions 434x450x184 mm, 184=20 (feet)+134+30 (tubes over case), 450=434+16 (speaker binding posts).
- Dimensions of the shipping crate: 650 x 650 x 350 mm, weight 18Kg.



# THÖRESS...

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

