

PrimaLuna

EVO 300 Hybrid Integrated Amplifier

Author: Nikolay Efremov Posted: November 10, 2021

This amplifier is the first hybrid amplifier in the history of the Dutch brand, and the developers have put a lot of effort not to disappoint its fans. Everything has been carefully thought out - the tube preamp section, the MOSFET power amplifiers, the power supply system ...

We will tell you about all this in detail, after which we will also explore the musical abilities.



De Groot prefers MOSFETS in his designs because their characteristics are close to vacuum triodes. The circuitry of the EVO 300 Hybrid power amplifiers is unique, with high parameters obtained without deep feedback. The input stages are built on complementary JFETs from Linear Systems, direct-coupled, without capacitors in series with the audio signal. The outputs are powerful MOSFETs, four MOSFETs per channel. The result is impressive, unachievable for a pure tube circuitry with such dimensions and cost: 100W at 8 ohms, 150W at 4 ohms, the damping factor is 160.

The capacitors in the pre-section are custom-made, made of polypropylene and tin foil, wound at half-speed.

The second important point is the uncompromising approach to component selection and execution. The output devices are connected to the same 2.4 mm PCB (standard 1.6 mm) with 105mu thick copper tracks (standard 35mu). Resistors in the sound path are Japanese Takman with 2% tolerance, low noise and distortion, with pure OFC copper leads.

The power amplifiers are fed from a separate source with a 500 VA transformer, in front of which there is a filter cutting off the DC component of the mains voltage. So the core will not hum even when the mains are overloaded. Each channel has an individual protection circuit with processor control.

Now about the tube preamplifier section. At first, I was surprised by the number of stages, three double 12AU7 triodes per channel, while most manufacturers can easily manage with one. This part of the circuit, together with Jan de Groot, was designed by Marcel Croese, a former Goldmund engineer, and it took them almost two years. The first tube boosts the input voltage by only 7dB (2.24 times) while the other two tubes, connected in parallel in repeater mode, are matched to a transistor termination. In such a set-up, the output impedance is radically reduced, allowing the MOSFETs to do their job with minimal distortion.

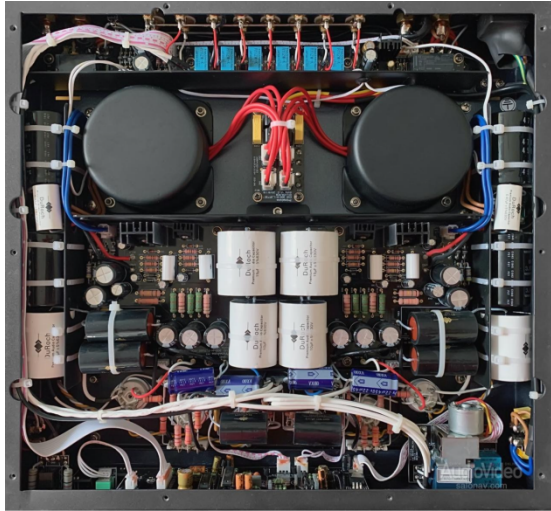
THE REUNION OF THE INDEPENDENTS

When creating hybrid amplifiers, any manufacturer seeks to combine the advantages of tube and transistor amplification, which is very tempting from an audio point of view. But the ideal result is to minimize the disadvantages of both circuits and ensure that they are matching, which is not easy. Let's see how this is done in our test subject.

The input stages of the Power Stage are built on complementary JFETs from Linear Systems, and the circuit is DC-coupled, so without capacitors in series with the audio signal.

Indeed, no transistor or hybrid amplifiers have ever been produced under the PrimaLuna brand, but no outside specialists had to be invited to design the new EVO 300 Hybrid integrated Amplifier. The PrimaLuna brand belongs to the Dutch company Durob Audio, which has had its solid-state design, repair and upgrade division for 20 years. Its name is Floyd Design (its logo is on the front panel of the amplifier). It is headed by Jan de Groot, who from 1986 to 1995 worked as a warranty manager for Luxman, Thorens, AirTight and B&W components, and later became responsible for the development and production of Sphinx amplifiers. This Dutch brand was famous at the time. And since 2002, Jan was already at Durob Audio repairing and modifying Krell, Cello, DartZeel, D'Agostino and others.

Although the tubes are of Psvane origin, one of the most recognized Chinese manufacturers, they are carefully selected by the proprietary "Premium Tube Selection 60 out of 100" rule and marked with the PrimaLuna logo.



The "Preamp" inside – partly hardwired, partly PCB

The DC-blocking capacitors in the preamplifier section are custom polypropylene and tin foil, made on special order and wound at half the speed to reduce losses and improve accuracy. The manufacturer indicates that they are as good as those in premium AudioNote components and other audiophile products in terms of performance and sound quality.

The internal hard wiring is executed with copper OFC, partly in Teflon insulation, and as volume control, a motorized potentiometer ALPS Blue Velvet is used.

In the EVO 300 Hybrid, there is neither a built-in DAC nor Bluetooth module, which is logic - in an amplifier built by all audiophile means - and unnecessary. Accordingly, all the switching is purely analogue - five RCA line stereo pairs, direct Home Theatre input, recording outputs, and active subwoofer outputs with Stereo / Mono switching. The optional phono stage is mounted under the bottom of the cabinet.

The tubes allow you to build a short broadband path with a short loop of its harmonics, so the harmonics and vibrations recorded in the recording are transmitted rarely clean and natural.

The amplifier is manufactured in China according to Dutch and American standards. The quality of craftsmanship and finish is impeccable.

During the creation of the EVO 300 Hybrid, the goal was to preserve the rich tube spectrum while working with even the toughest loudspeakers. Whether the

developers managed to take the best of both worlds, we will now check. We will connect the B&W 805 D3 bench monitors - the compact systems with higher sound and spatial resolution - to the amplifier.



I load into the player a perfectly recorded Austrian CD [1] with waltzes by Strauss. The effect is fascinating: the monitors transmit an incredible amount of subtle musical nuances, but there is no feeling of information overload. Thanks to the abundance and, most importantly, the authenticity of the timbral features of each instrument, the playback process is perceived as a true musical event, taking place here and now. Lamps allow to build a short broadband path with a short loop of their harmonics, so harmonics and vibrations, recorded in the recording, are transmitted rarely clean and natural.

A notable contribution, of course, comes from the diamond tweeters - from the upper part of the spectrum, they form a sort of three-dimensional cloud, which greatly enlivens the atmosphere.

Hugh Masekela [2], a hot African original, built on complex rhythms and a jazzy drive. The abundance of percussion does not confuse the system at all - it clearly separates each beat, and by its timbre, you can guess the type of exotic instrument. The brass is literally with a spark, and the sound as a whole is large-scale and rich.

The cymbals are superb - bright, fast, made of real live metal. The loop of fading reverberations descends smoothly.

Some people believe and say that MOSFET-based products "give loose bass". Apparently, you just need to know how to cook them - EVO 300 Hybrid has no problem with this at all. Of course, the monitors cannot reproduce the infra-low frequencies, but all the power of a big drum or bass guitar, they convey absolutely adequately. The damping of the cones is optimal, and they can clearly deliver a fast series of beats while still being loose enough to show the vibrations and aftershocks of any kind of diaphragm.



The cymbals are superb - bright, fast, made of real live metal. The fading reverberation loop falls smoothly, and there is no excessive contrast or simplification in the spectrum.

The EVO 300 Hybrid has a transistor pitch (tight cone control, instant attack on sharp strokes, powerful energy in the lower register) and a tube "velvet", noticeable on strings, winds and keyboards. And you don't have to listen to chamber music to appreciate this beauty - putting "Steel Wheels" [4] on, and I was surprised by the richness of colours in the recording, which I know from many tests.

With all its precision and detail, the amplifier does not dispose to analyze the sound. It tries to captivate the music, to cause an emotional response. And even picky audiophiles are unlikely to find a reason to criticize - every stroke of the sound picture is drawn quite clearly. The resolution here is really on the mark.

And, of course, the soundstage. The B&W 805 D3 is distinguished by its volume and filigree fixation of imaginary sources, but this would have been impossible without the amplifier circuit's ideal frequency and phase linearity.

To create such an impeccably integrated unit from the tube input to the transistor output is very difficult. Still, the developers of the EVO 300 Hybrid, in my opinion, have been one hundred per cent successful!

THE MUSIC

1. Johann Strauss, <<Wiener Blut 2>>. Andrachek, 1995
2. Hugh Masekela, <<Hope>>. Triloka Records, 1999
3. Bill Evans, <<Undercurrent>>. United Artists, 1962
4. The Rolling Stones, <<Steel Wheels>>. Virgin Records, 1989

THE COMPONENTS

Luxman D03K CD/SACD Player

B&W 805 D3 speakers

Cables:

Luxman JPR 15000 interconnect cables

Acoustic Transparent Cables Ultra

Transparent Performance Power Cables

PrimaLuna EVO 300 Hybrid

Manufacturer: Durob BV (Netherlands)

<https://www.primaluna.nl>

Analog Inputs: 5 x RCA, Home Theatre || Outputs: Tape, Stereo/Mono Sub, headphones, acoustic screw x 4 ||
Amplified frequency range: 10 Hz - 80 kHz (+/- 3 dB) ||
Output power: 2 x 115 W (8 Ohms), 2 x 170 W (4 Ohms) ||
Signal to noise ratio: > -105 dBA || Harmonic factor: <0,2% (100 W, 10 Ohm) || Input impedance: 34 kOhms ||
Sensitivity: 415 mV || Damping factor: 160 (1 kHz) ||
Total gain: 37,2 dB || Maximum power consumption: 645 VA || Dimensions (W x H x D): 405 x 385 x 205 mm ||
Weight: 29 kg || Price: 586 650 rubles

Online review:

<https://www.salonav.com/arch/2021/11/integralnyj-usilitel-primaluna-evo-300-hybrid.htm>