

Harmony Design

EAR909 headphone amplifier

一流的訊號源，配合多變多樣的發燒配置，一套高度優化的高端音響設置，令耳機愛好者更新思考新一代旗艦級耳機所能達至的前所未有音質可能性，趣味性。

追求最理想的耳機再播，最困難在於營造出色的聲場空間立體感覺，強烈的臨場真實感能誘發無限想像空間，令聆聽者不其然地進入演奏氣氛之中。

當中起絕對關鍵性的一大重點，在於**應對超微小電平的重播能力...**

整體訊噪比固之然要低，這關乎空間背景之絕對寧靜度，亦即底噪，此其一；

其二，更加需要克服的是超微小電平的處理能力 – 當對應超微細訊號放大時，能否維持正確的線性重現(low-level linearity)。

換言之，放大器能够**保持線性響應的最低電平下限**，技術上究竟可以達到何等微細！

優秀的耳機驅動，最難能可貴是放大器能够準確重現超微弱訊號的卓越能力。

超微小電平著著影响整體音色，弱音餘韻，泛音，甚至沒有聲音時的寂靜感／空間感。

超微小電平的重播能力不好時，聲音消失之際(尾聲)的重現性就會不正確；

聲音餘韻不自然地衰減，短時間訊速消失不見，就會覺得不協調不自然。

很多時令到聲音短而促，奇怪地太過干淨... 那是一種不自然的干淨。

EAR909 begins from the pursuit of one exceptional high quality amplifier that can match well with modern top quality headphones. The result is a custom project between Audio Physics(HK) and Mr. Stridbeck of **Harmony Design** Sweden.

*We hope the **EAR909** headphone amplifier will serve its users many years of life like music enjoyment, and pride of ownership.*

EAR909 design features :

EAR909 is evolved from ***Harmony Design*** top pre-amplifier PRE906.

A stiff, stable & noise-free power-supply section is of utmost importance.

In order to suppress AC power-line & radio frequency interference for a completely clean and stable voltage into subsequent amplifier stage, an entirely new power-supply system is developed & finalized in mid 2010.

This power-supply / voltage regulation system is rather complex, that took Mr. Stridbeck over one year to develop and evaluate....

it consists of a main-supply section, located away from the amp circuitry, plus two supplementary regulation sections, which Mr, Stridbeck named it the *X-power*, one for each channel, located directly underneath Left & Right amplifier section.

In order to achieve the lowest noise possible and outstanding transient, custom designed discreet regulator with ceramic opamps are used instead of those common types such as 78xx / 79xx series. It is the prerequisite for clean & very neutral sound.

The circuit topology is based on high quality IC circuits with discrete transistors operating in Class A. Only one pair of power transistors is used in each channel for best possible signal integrity & phase linearity. These transistors are from Zetex England, one of the best that can be found.

Both channels are true mono design, hence both L & R signal ground system are completely separated.

When using the 4-pin (and 3-pin) XLR headphone output, L and R headphone earpiece are, in such a way, separately driven reference to its own signal ground point. This gives the best possible channel separation and excellent S/N ratio.

For effective EMI isolation, the high quality 50VA, 2 X 21V toroidal transformer is housed in separated chamber, & maximum separation on the layout for main supply-section & sensitive amplifying circuit.

EAR909 output is DC protected by a high sensitive circuit that disconnects its output if more than 200mV DC is present. When no DC is applied to input (which is normal) there is only a maximum of 2mV DC at its headphone output !

A sealed, gold-plated Ground-Lift switch is used at both the signal XLR input, and the bypass signal loop out.

Each ***EAR909*** unit is built with components of the highest caliber, no magnetic materials are used. Only fine gauge solid-core wiring is used through out for best signal integrity.

The manufacturing process is time consuming, ***as no electrical connector of any type is used for all PCB inter-connections***... all signal & power junction points are hard soldered for best possible clean connection, and fail proof under long-term usage.

EAR909 design features :

The solid internal aluminum casing is reinforced with cross-braced internal structure, and the decoupled top plate is made of strong, but lightweight aluminum. This provides good cushioning in terms of mechanical disturbance. The interior is further subdued with visco-elastic damping sheets on all strategic locations.

The unit is a good example of Nordic styling with simple aesthetic.

It is highlighted with a pair of individually made, cherry wood panel handcrafted by a Swedish furniture-artisan in Gotland. Each and every wood pair are different, and we hope it mirrors the amplifier's outstanding sound performance.

For best possible open sound & transparency, we build the **Ear909** with options of two precision made volume attenuators. Both of these 2 attenuators are configured as Ladder-Type volume adjustment, that employs only two resistors in each & every volume step.

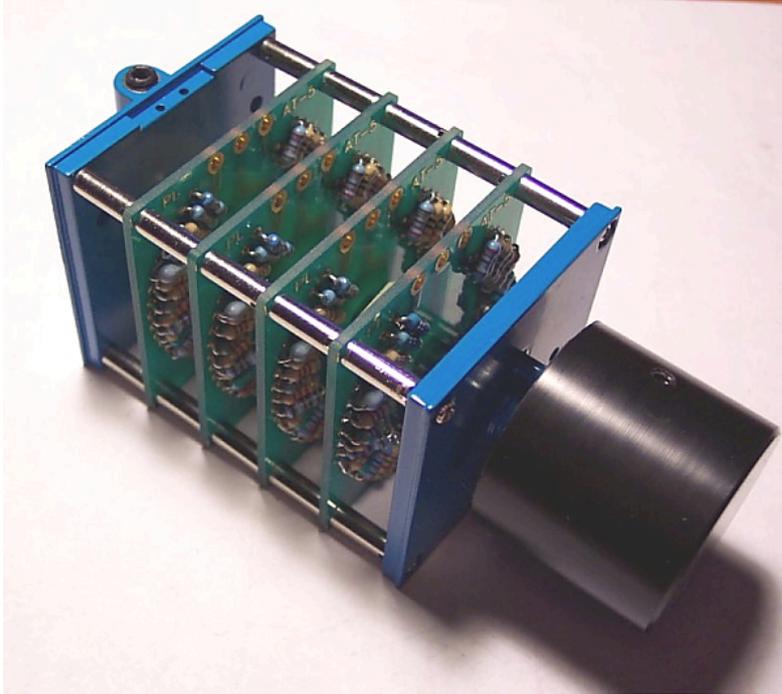
Option 1) The Swiss made ELMA '04A2R00' 24-step Ladder :

This is one of the long time 'work horse' in high-end industry, but unfortunately ELMA do not produce this excellent mechanism anymore ... since 2009. Well, *Harmony Design* in Sweden still has some limited quantity till stock last !



EAR909 design features :

Option 2) Acoustic-Dimension 41-step Ladder type attenuator from the Netherlands :



this is a four deck Ladder-Type attenuator, again uses only two resistors in each and every volume step; this gives a virtual continuous adjustment for precise, & repeatable listening level adjustment.

Its wiper is intensively modified, making it works like those high current rheostats used in top-class recording studios worldwide.

It is casted in aluminum body with precision ball bearing support, and hard silver contacts. Extremely long-term durability is to be expected.

All technical specification are subject to change without prior notice.

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