PRESS RELEASE

Epos launch new ES14N loudspeaker

Embargoed until 19th May 2022

THE STORY OF EPOS AND KARL-HEINZ FINK

When I got the opportunity to buy EPOS from Michael Creek around 2020, I started to think about it. Should I do it? The brand still has a lot of loyal followers, following the ideas of Robin Marshall, who founded the brand in 1983 and who tried making things in a different way from what was called the traditional British way, defined by the famous BBC influenced constructions.

Honestly speaking, I was not really excited to follow some rules that were used in the 1980's. That was when I started my journey in HiFi and hey, I think I learnt something in the last 35 years that I wanted to use. So I was close to letting it go when I found an interview with Robin Marshall, made many years after he sold the brand and moved on. Obviously the interviewer wanted to get confirmation from Robin that all he did was magic. But Robin's answer was completely unexpected. Not only did he walk away from loudspeaker development, he also said clearly that he did the speakers based on the ideas and know-how he had at that time - not more and not less. That sounded like my way.....trying to stretch boundaries and not copying the past. So I made the deal with Mike Creek and this was the beginning of the new EPOS story. I was joined on this path by my old friend David Jefferys who had been Sales Director for Epos and Mordaunt-Short when they were both part of TGI plc in the 1990's.

THE FIRST NEW MODEL: ES14N

Restarting EPOS could only mean re-creating the most famous model, the ES-14. This was a 2-way speaker in a fairly big cabinet and classic looking cabinet, to be used on a dedicated stand.

The design should be classic, not lifestyle, only doing things that help with the sound and as straight forward as possible.

Analyzing the old construction was interesting. It used a 7“ woofer with Polypropylene cone and an underhang coil with a huge magnet, but multiple layers of VC winding to make the whole coil heavy in order to get a sort of roll-off in the response curve of the woofer. The size of the woofer was not following any standard - too big for a 6.5“, but too small for an 8“. But it was a clever choice, because you could get more drive at lower frequencies more like an 8“ and a midband character closer to the 6.5“.

THE WOOFER

Choice of Polypropylene as cone material was fine. It’s a bit out of fashion ….too many speakers with sleepy dynamics and bad timing have been made with drivers using Polypropylene cones. But when analyzing such drivers, you are not only finding Polypropylene in the cones, you also often find high damping Rubber/PVC surrounds together with it. Such surrounds are evil - even so they can make very smooth response curves. Unfortunately they also eat a lot of dynamics, because the surround has some serious hysteresis built in.

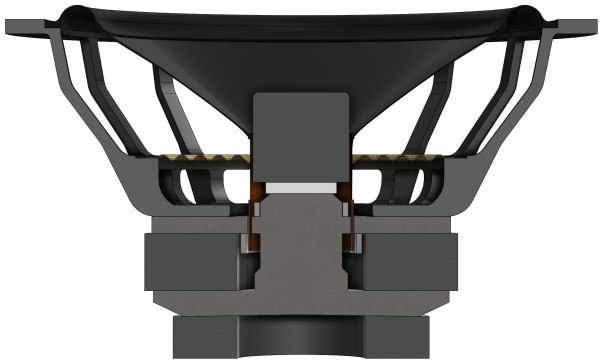
The Polypropylene cone is a nice material. Very consistent, can be made with different filling material like MICA and it can even be injection moulded for funny shapes or variations in thickness. As long as it can be combined with a low damping rubber surround, there is no reason why it should sound less dynamic compared to other materials.

The modern method to diagnose a cone is different to the methods of the past. In the earlier days, before finite elements analysis was used, a cone shape was designed from experience and tried out with different materials. A high damping surround was always helpful to get the response curve flat without the need to make a new tooling, and it was not possible to predict how possible new cone shape had to be.

This is exactly the benefit of modern simulation methods. You can simulate multiple shapes and variations of the cone material in relatively short time and find the best solution without cutting one piece of metal. Our simulation expert, Nicola Paparella, came up with a shape pretty fast and that was an unusual shape with a concave profile that looked promising on paper. But no, it did not sound very good and it proved (again) that good results on paper not necessarily sound nice. The second version of the cone was a lot better. It got variable thickness and some

special shapes on the neck joint and finally a filling with 10% MICA to define the stiffness we wanted. The surround is a low damping rubber with some shaping to get the best termination with the cone. No dustcap is used, but a metal phase pug - gave the best out of axis behavior and the nicest roll-off.- just like it did in the original ES14

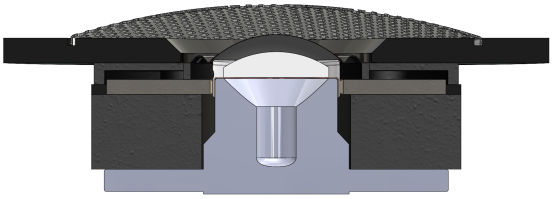
The 36mm voice coil of the unit was a relatively straight forward choice. It uses a 18mm long 2-layer winding of copper wire on a non metallic TIL former (TIL is a glass fibre/Epoxy mix). The shape of the magnet was optimized, using simulation again, to have the best linear BL behavior and a very low variation in inductance over the movement of the coil. This gives you the lowest level of linear distortion and Intermodulation distortion and is clearly different to the magnet system used in the old days. After 20 years of Klippel measurements, we now know what to do to get better results and the fact, that the impedance does no longer change with the position of the cone, makes it possible to use a crossover without modulations of the response due to the inductance variations.



All the parts are mounted into a very strong glass filled plastic basket made from scratch.
So the woofer of the new ES14n is following the recipe of the original speaker in big parts and so does the tweeter.

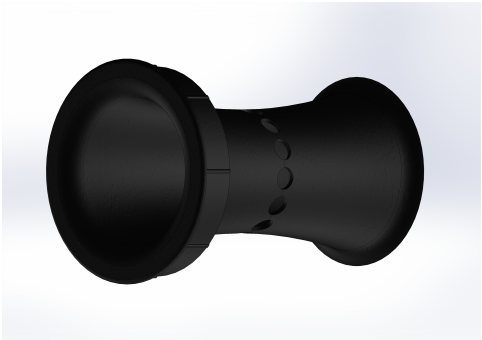
THE TWEETER

The original design tweeter was a 25mm metal dome, the new one is now 28mm to work better at the lower end of the tweeter range. The dome itself is made out of an Aluminum alloy and gets an



additional ceramic coating to increase the stiffness. Together with the fabric surround and a special shaped Mode control ring, the resonance peak of the tweeter is around 30kHz, shifting it out of the 20kHz limit of human hearing. The magnet system uses Ferrite magnets and an improved cavity combination to minimize distortion. Ferrite is the better material for a tweeter if a small size is not needed. It offers a lot more “air“ behind the dome and the surround and avoids compression and harmonic distortion because of the bigger cavities. A copper cap in the magnet reduces distortion and increases level at very high frequencies. The tweeter used no waveguide for sound reasons. Designing a waveguide is easy, but the sound quality in a normal listening room does not benefit from it - just the opposite. In professional applications with highly damped rooms and short distance monitoring, a waveguide can make perfect sense, but can take away openness in a normal listening room. To protect the dome, an oval asymmetric mounted perforated metal grill has been added. This part is not removable and was used during the voicing of the speaker. The massive metal plate of the tweeter is only touching the cabinet on 4 points around the screws (idea taken from Roy George of NAIM with his blessing) to reduce a transfer of energy between tweeter and cabinet baffle. The tweeter has its own cavity in the cabinet.

THE CABINET



The cabinet itself is using more or less the same volume of the original ES-14. That’s not a big surprise, as the cabinet volume is the result of the driver configuration and the defined bandwidth of the speaker. However, the shape of the cabinet is different. The front baffle is tilted to the back in order to time align the woofer and the tweeter plus it can help with the standing wave mode between front and back. As the design is a reflex system, a port is of course needed. It’s located on the back of the cabinet and the whole shape of the port has been chosen to minimize air flow noise. In order to compensate for the open tube resonance of the port,

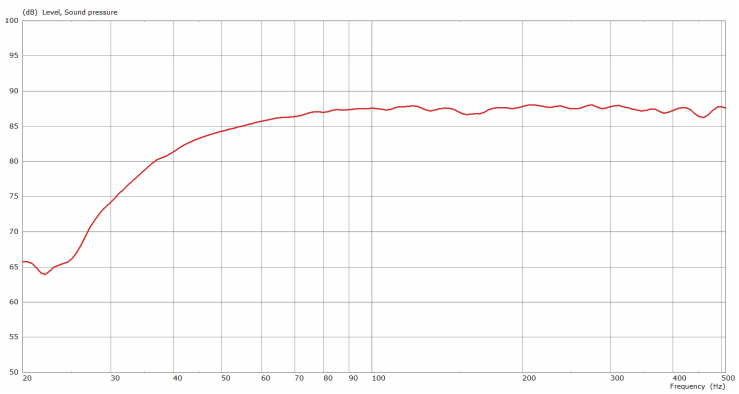
some openings were added in the middle of the port. To avoid loss of low bottom end, those openings are covered with soft material, tuned to only kill the unwanted resonances of the port.

The cabinet uses a double layer MDF construction, glued together with the latest generation of damping glue. This latest generation is more consistent compared to older solutions and allows easier production. Additional bracing has been used to control the panel vibration modes and reduce the unwanted radiation of the whole cabinet. Only a little damping material is needed internally.

The front plate is an extra part to be glued and screwed on the main cabinet. It has a 45° chamfer around it to control diffraction effect in the 2000-3000Hz region. The first prototypes used square cabinets and it was impossible to get a good frequency response on axis and out of axis. Rounding the corners was not really helping, only the chamfer made the diffraction error a lot smaller and helped balancing the upper midband. An old fashion way, but a useful solution.

The speaker comes with front grille, but it is not recommended to use it when listening to music. It's more a protector when not using the speakers. The tweeter itself is protected anyway and the PP cone is not easy to damage.

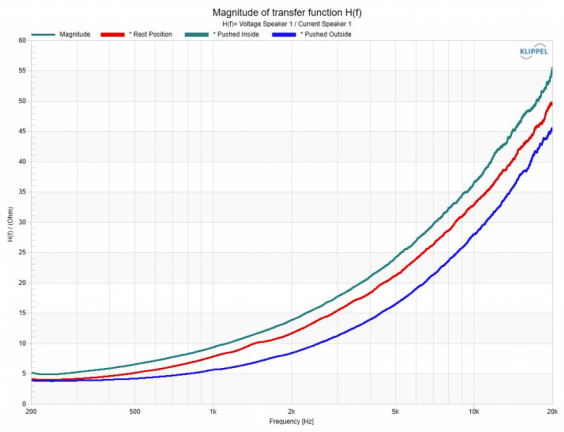
The alignment of the box is a flat 4th oder alignment with a tuning frequency of 38Hz. It matches with the bottom end gain of many listening rooms and allows fast and precise bottom end when used in the right position in the room.



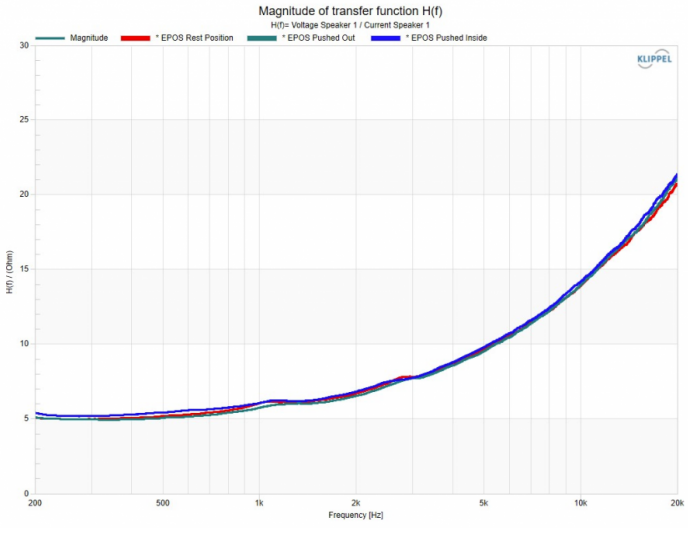
The binding posts are 4mm banana sockets, mounted on a metal plate. Those banana sockets use very little metal internally to guarantee the best sound - that's one of the nice ideas of the original design and better than using very expensive "High-End" binding posts with litte metal but a high price tag. Those single wiring sockets feed the amplifier signal to a crossover that sits on the rear panel of the speaker.

THE CROSSOVER

The original crossover needed very little components and was extremely simple, the new ES-14N follows the experience of the last 20 years that electrical parts are easier to control than mechanical filtering in driver units. In earlier days, before Klippel, the multilayer coil of the original woofer was designed in a way that it rolled off the woofer with the weight and the high inductance of the windings.



In the new woofer, the coil is only 2-layer and with compensation rings, the impedance over excursion is very constant and that avoids modulation of the crossover. The coil is executed as air coil and adds no core distortion. A non compensated magnet, would indeed react with a crossover and that means the old idea made sense. However, the way to roll off the woofer with high inductance, added another set of problems - but we learned about it only in the last 20 years. There is a small resistance between the woofer and the amplifier in tower to make the design less sensitive to different damping factors. Instead a larger magnet controls the alignment. The tweeter is using no Ferrofluid in the gap to



suppress the resonance frequency of the tweeter. Ferrofluid sounds like a good idea, but it is a sort of oil that changes behavior when playing music. This is a very non linear process and changes the sound depending on level and music style. Tweeters with no Ferrofluid are more open and natural and show less dynamic compression compared to standard tweeters with Ferrofluid. The other side of the coin: it needs a bit more crossover to be safe, but the total combination is a lot more linear. Even so the metal dome peak is shifted to around 30kHz, a new sort of filter has been added to notch it out without changing the level below 20kHz. The reason is that modern digital converters are shifting a lot of noise to higher frequencies.

To give the speaker a home to sit on, a dedicated stand is available. The middle part is made as a massive wooden bar, combining 4 layers of wood, glued together with same damping glue used internally in the Es-14n. The top plate is a double layer steel plate with a Bitumen layer in between and the bottom plate is a thick steel plate to hold adjustable spikes. The Speaker can be shipped without a stand, so other 55cm high stands can be used as well.

Karl-Heinz Fink. April 2022.

Expected retail price in Europe is 4.500€ icl. tax

Embargoed until 19th May 2022

For more information please contact:
Karl-Heinz Fink
Mobile: +49 160 947 196 73
karl-heinz@finkteam.com

David Jefferys
Mobile: +44 7967 676450
davidj@finkteam.com

https://bit.ly/PressReleasesonbehalfofEposLoudspeakersandSoulnoteElectronicsHighEndMunichMay2022

SPECIFICATIONS EPOS ES14N

Frequency Response
40Hz-23kHz (-6dB)
33Hz-25kHz (-10dB)

Average Impedance
> 6 Ohm

Minimum Impedance
4.3 Ohm @ 160Hz

Sensitivity
87dB @œ2.823V / 1m

Distortion
0.2% THD @ 1W

Crossover Frequency
2700Hz

Bass Unit
High Power 7“, 35mm mm voice coil diameter, Hybrid Ferrite and Neodymium magnet, injection molded cone with variable thickness and Mica filling. Low hysteresis rubber surround.

HF Unit
28mm tweeter with Aluminum/Ceramic compound dome and no Ferrofluid

Dimensions
491mm x 250mm x 385mm (HWD)
Stand: recommended height 515mm

Weight
16kg without stand

Finish
Walnut, White semi matte, Black semi matte

Cabinet
Reflex loaded, damped Sandwich panels, one dimensional braces, Low Noise Port, Dual Front Panel

Terminal
German made Low Metal Mass 4mm Banana terminal