

FACHZEITSCHRIFT FÜR PROFESSIONELLE AUDIOTECHNIK

1210

K 30603

# studio magazin

33. JAHRGANG • NR. 362



REPRINT

REVIEW: NEUMANN KH 120

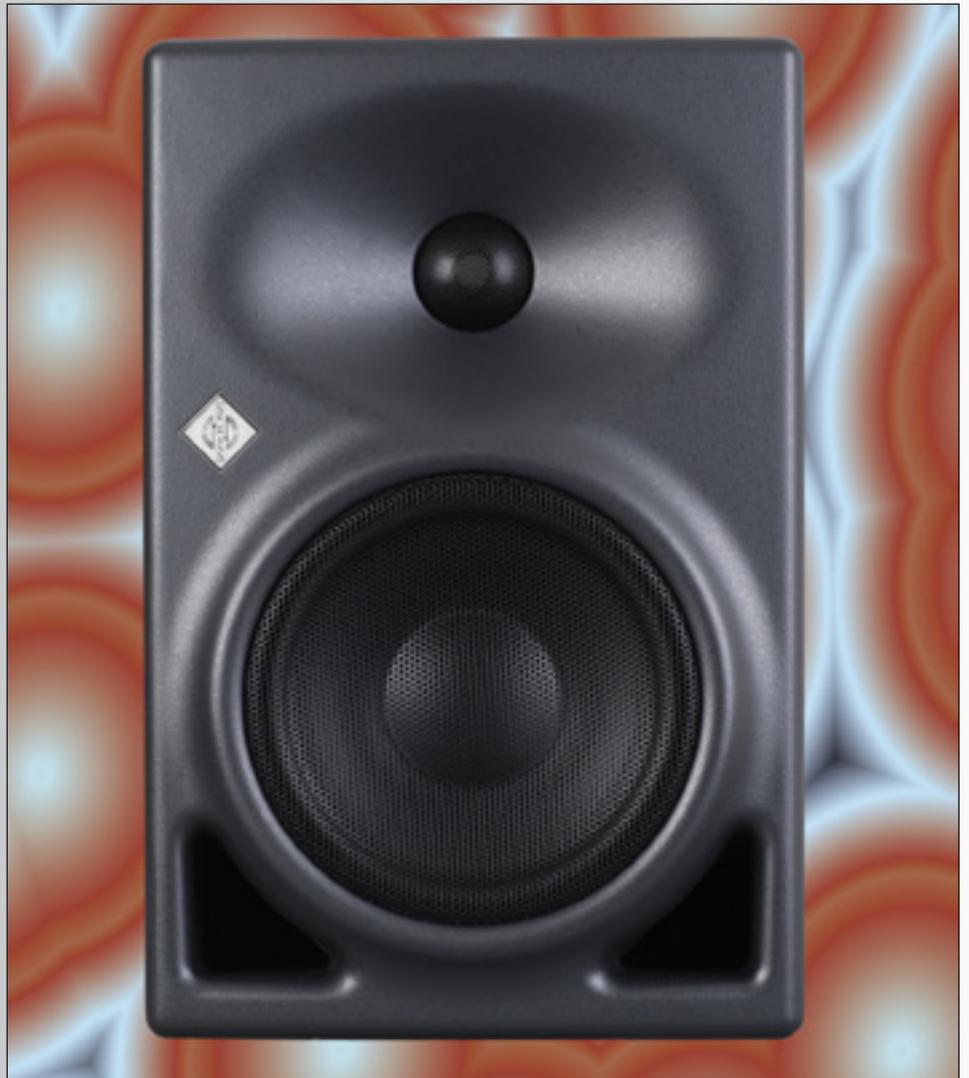
# Ambitious plans

Fritz Fey

Pictures: Dieter Kahlen

## The Neumann KH 120 active two-way near-field monitor speaker

What now, Neumann? One may be excused for asking this somewhat surprised question. From a historical point of view, we are familiar with Neumann microphones, Neumann mixing consoles and Neumann disc cutting lathes – then why not also studio monitors? What is regarded as an infallible standard of transmission quality, namely the Neumann microphone, should also be welcome to us at the end of the signal chain, for monitoring – the Neumann studio monitor, naturally with the same high quality standards which we have all sooner or later come to know and value. This sounds logical, doesn't it? At this year's music trade fair Prolight + Sound, Neumann surprised the audio pros with the first official news of the adoption of studio monitors into the future product program and thus in a sense assuming the role of "heir" to the traditional manufacturer Klein+Hummel, which has belonged to the Sennheiser Group since 2005. More precisely, in future Neumann will develop the "studio monitor" business area according to its own concepts and standards. The external signs of this structural change can already be



seen. The production plant located in Ireland has been adapted to Neumann standards in terms of quality control and assurance, effective international structures are being used to serve existing worldwide distribution channels, and the complete production process has been analyzed, restructured and designed more efficiently. However, what is even more apparent to future users is the first marketable product of these efforts – the KH 120 studio monitor, which will be followed by other products en route to a complete product line within the next two years, thanks to a

development team that will be expanded in the near future, with a concentrated focus on the requirements of users. I do not know how a company with more than 80 years of experience feels in the role of a newcomer, however Neumann can make use of the expertise of the former Klein+Hummel engineering team, so that demanding goals can be pursued from the beginning. This is also necessary, since studio monitor producers with big names and corresponding market shares are as numerous as the proverbial fish in the sea.

In coming years only the addition of “KH” to the model name will recall the background of an entrepreneurial decision which by then will hopefully have been proved correct. From what most of us know of the Neumann company, every effort will be made to carry over the quality represented by Neumann microphones to the loudspeaker developments. This listening test is to explore the extent to which this has already succeeded with the initial product. A pre-production model was available to me, appropriately identified on the back with a label saying, “Field Test Sample – not for sale”. This was the purely analog variant of the model, KH 120 A, which will be joined by a digital variant, KH 120 D, with AES3 and S/P-DIF interfaces.



## Overview

The KH 120 A is an active near-field monitor. State-of-the-art simulation and measurement technology was used in its development. The mathematically modeled waveguide, analog A/B class power amplifiers, a completely redesigned bass reflex port, and a woofer and tweeter chassis especially developed in collaboration with the supplier demonstrate that the Neumann logo has not simply been incorporated into an existing product line. In fact this is a new, independent product created in accordance with the concepts of the producer Neumann,

designed for use in professional studio environments as well as in demanding project and home recording studios. The innovative tweeter with a titanium metal dome in conjunction with a long-throw bass driver and sandwich cone ensure exceptionally uniform dispersion over the entire frequency range – wide horizontally and narrow vertically. The magnetically shielded cabinet consists of two aluminum shells (the cabinet body and the front panel), with an air-tight connection provided by long screw bolts. The one-piece front panel prevents diffrac-

tion. Time correction is achieved by positioning the woofer and tweeter at different depths in the front panel. On the back are switchable correction filters to compensate for positioning in the room as well as switchable and adjustable controls for the input sensitivity. The basic shape of the cabinet has a front panel inclined slightly upward, which I presume is designed to prevent comb filter effects from arising due to adjacent worktable or mixing console surfaces. Separately for each amplifier channel, to protect the drivers, two individual-

operating limiters are incorporated; these are in the signal path only when the limiters begin to work. In addition, there is integrated protection against thermal overload. If such overload occurs, the Neumann logo signal light, which is white during normal operation, becomes red. The amplifier module installed in the metal cabinet benefits from the good thermal conductivity of the heat sink and the cabinet. Moreover, the non-parallel walls of the KH 120 greatly attenuate internal standing waves in the cabinet. For practical applications, the large selection of mounting accessories is certainly important, particularly when exact positioning is required in confined working conditions, for instance in an outside broadcast van.



*The factory in Ireland has been completely adopted to the new conditions and requirements*



## Listening

Even though after many years it has become a routine, I still find it extremely exciting to install a new loudspeaker in my control room. The compact dimensions of the KH 120 made the installation a simple matter, and the front panel, tilted slightly upward, did not necessitate any correction in the installation height. I spontaneously noticed that the bass reproduction was surprisingly round and well-defined for the size of the cabinet, evidently due to the redesigned reflex ports and the long-throw woofer. A “familiar” sound impression was immediately established, in a positive sense with no tonal peculiarities, but with a precisely reproduced stereo basis and defined phantom center. It is true that in a good room many other studio monitors can also attest to these characteristics, however I was very impressed by the transparent signal depth differentiation, the transient fidelity and the vivid stereo imaging. Although in a certain sense the KH 120 tends toward enhancing the sound, poor productions, and believe me, I have been able to collect many examples of these for such purposes over the years, really sound very unpleasant – at least poor enough to make clear at once that cor-

rection of the mix needs to be put on the agenda. The homogeneity of the dispersion in the horizontal plane is very impressive, no matter what one’s monitoring position. Along the whole width of the console, tonal discrepancies were within a very narrow tolerance range. I also noticed the low tendency toward comb filter effects due to the interaction with our mixing console, which was previously discernable with



many loudspeakers in critical angle areas. The KH 120 can thus be regarded as a cooperative partner in critical installation situations. However, an experiment with connecting our subwoofer clearly demonstrated that only with such an addition in the low range is there a true impression of a full-range system, even though I have already characterized the bass reproduction as exceptional for a loudspeaker of these compact dimensions. One cannot expect physical miracles in this regard from such a “dwarf”, however it does give a good account of itself.

## Summary

With its debut in a new market segment, the Neumann company demonstrates that the use of existing engineering expertise, combined with clear, independent concepts concerning the quality level of a compact near-field monitor immediately results in a competitive product. One can assume that entering the market with a compact monitor and the associated access to a broad base of potential users is not an accident, but is deliberately aimed at the fastest possible expansion of a “new market”. The sound qualities of the KH 120, with precise reproduction, balanced tone and uniform dispersion rightly deserve to be associated with the Neumann logo. The price for a pair of just under 1,400 euros, including value-added tax, permits a broad spectrum of applications for this new loudspeaker and, not least in importance, takes into account the tight budgets of the audio production industry. It is clear, if I may use the expression, that Neumann must not “fluff” its entry into the studio monitor market. I am glad to confirm that the KH 120 project is truly far removed from such a result. In my opinion, the KH 120 can very quickly become a standard tool in the studios of today, which expect high quality for comparatively little money. A successful start, that makes one curious about coming developments! ■