

Sound & Recording

Producer, Engineer,
Composer & Musician

NDR dubbing studio
with an Aurus
mixing console by
Stagetec



Digital microphones / AES42 interface

Digital microphones in use at NDR Television

The North German Broadcasting Service (Norddeutscher Rundfunk or NDR for short) has been using Neumann digital microphones for a year now at its new dubbing studios and in the editorial office in Hamburg. Their experiences are not just of interest to broadcasters.

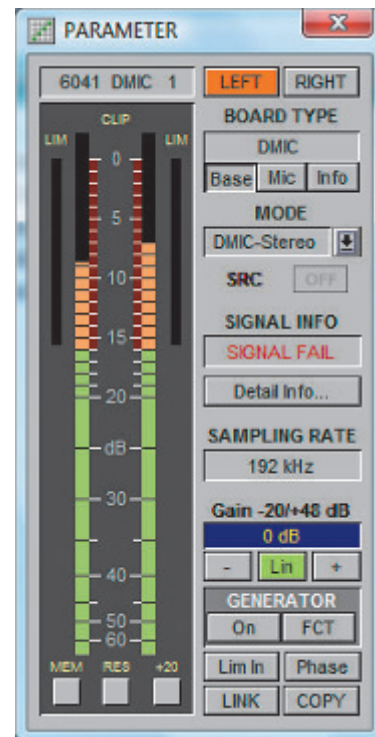


Rolf Brandt, head of NDR TV's audio department,
with a digital microphone at an editorial desk.

At first the Neumann digital microphones were tested for a year in NDR's two new dubbing studios. Because the dubbing department also uses analog microphones, this proved to be an ideal situation for parallel trial operation. The digital microphones worked so well right from the start that NDR started using them in normal operation immediately. The microphones are used in the dubbing studios with Aurus mixing desks by Stagetec, which are equipped with AES42 interface cards. The digital microphones are used in asynchronous mode. The digital inputs are equipped with sample rate converters.

On account of this positive evaluation in the dubbing department, NDR decided to use the digital microphones in production office editing as well. In terms of programming, NDR, which is the third-largest institution in the ARD broadcasting consortium, especially emphasizes sports and daily news as well as politics. In these areas, the production process comes down above all to timely, prompt and efficient coverage of the topics. Among other things, this is achieved by moving production and journalistic editing closer together. Video and audio editing, e.g., voice-overs, are handled in the production office by news producers

and editors. Because these users naturally lack the expertise of an audio engineer, technical measures must be taken to make the practical production process and operation correspondingly foolproof for this user group. Digital microphones digitally map the entire dynamic range without gain adjustment. This makes them much simpler to use in practice, since overdriving is ruled out in the electrical signal path. The digital microphones can be connected directly to the workstations at the editorial desks via an AES/EBU interface. Twenty-five Neumann digital microphones are in use. Two D-01 microphones, for example,



are used as main microphones for classic recordings. In production office editing, the Neumann KM 185 D with its hypercardioid directional characteristic is used to minimize the adverse effects of room acoustics. In order to maintain a minimum speaking distance, the KM 185 D microphones are installed in windshield baskets. In special situations, NDR uses the TLM 103 D.

Interview with Rolf Brandt and Jan Riehm, NDR

We spoke with Rolf Brandt, head of NDR's TV audio department, and Jan Riehm, production engineer, about the use of Neumann digital microphones at NDR TV as well as the advantages and problems entailed by widespread introduction of digital microphones.

So what was the decisive factor when it came to using digital microphones?

Rolf Brandt: For one thing, the costs. The digital microphones are not more expensive, but rather, if one takes the overall system into account, including preamps and voice processors, even more cost-effective.

This is also a guarantee for future acceptance in the market. Of course practical handling is also important, particularly in connection with the Stagetec consoles, because the microphone parameters can be controlled remotely from the console. EMC (electromagnetic compatibility) is also an issue. Complex shielding measures for the wiring of the analog signal paths, for example, were required when setting up the new audio mixing studio. It is possible to minimize electromagnetic interference by using digital microphones. However, digital microphones can be also used in response to brand new kinds of production demands. The digital microphones offer big advantages in remote operation. Transmitting signals from one building to another at microphone level used to be inconceivable. Now it's no problem at all thanks to the conversion into the AES42 standard. So the AES42 interface is certain to come up as a subject in future calls for tenders.

What has been your experience of digital microphones?

Jan Riehm: Our colleagues here at NDR TV accepted the digital microphones without reservation. As intended in the test, the KM 145 D (cardioid with bass roll-off) is used as a capsule with a directional

pattern optimized for speech, and there isn't a single employee who ever wants to give them back. This capsule has pushed aside everything else we have ever used in this application segment up until now, and has since become our standard microphone capsule. This, however, is not solely due to the fact that it is a digital microphone; instead, it was the excellence and quality of the capsule that were decisive.

What about field assignments?

Jan Riehm: Handling problems are still anticipated in practical outside broadcasting operations due to the mixing of analog and digital technologies. Aside from this, we still have plenty of high-quality analog microphones available because they are very robust. So it isn't necessary to replace these microphones yet. That is also why use of digital microphones was so interesting in the dubbing studios and at the editorial desks because these working environments were being redesigned from the ground up.

Rolf Brandt: For use in other areas, for example, ENG and foreign studios, the range of digital microphones is not complete yet. This also requires shotgun mikes, etc., and mixed analog/digital operation is out of the question here, because then no more advantages arise from using digital microphones.

Conclusion

The NDR audio engineers' statements clearly show where the advantages lie in operation. Actually, it is surprising that use of digital microphones is not even more widespread already. But this is surely due to the fact that good analog microphones have a long service life and many mixing console manufacturers have not implemented an AES42 interface yet – in part because of the high operating current. Stagetec is an exception in this regard. However, this situation will probably change soon thanks in part to vendors of external AES42 interface components such as RME or Neumann's new eight-channel DMI-8. One thing is clear: The future belongs to digital microphones. →

Remote control of the parameters of a digital microphone via the Aurus mixing console by Stagetec