

Discover the heart and soul of sound – with Sennheiser’s new MKH microphones

Amsterdam/Wedemark, September 2007 – Take a unique microphone principle, an extremely small, modular design and a sound reproduction with a unique clarity and a natural, subtle warmth. The result is a series of microphones that can capture the true heart and soul of sound without losing any of its transparency or power. The MKH 8000 series of RF condenser microphones from audio specialist Sennheiser sets new standards for top-quality speech, vocals and instrumental recordings with an extremely wide frequency response.



“With our new MKH microphones we have consistently advanced the high-end technology of the RF condenser microphone and the wider frequency response of the MKH 800,” explains Sebastian Schmitz, Product Manager for microphones. “The technical development was supported at a very early stage by sound and listening tests, and the sound engineers involved in the tests confirmed that the new microphones have an incredibly impressive sound quality that even goes beyond that of the innovative MKH 800. In response to many requests from long-term users, we are also offering a wide range of accessories for the new MKH microphones, allowing them to be optimally adapted to the highest-quality classical music, stage, broadcasting and film recordings.”

Two parts – a clever solution

The new series of high-end microphones presently includes three models: the MKH 8020 has an omni-directional pick-up pattern, the MKH 8040 is a cardioid

version while the MKH 8050 has a super-cardioid pick-up pattern. All three microphones consist of two modules: the microphone head that contains all the acoustically important components, and a separate XLR module. If you need to make the already compact microphone (only 1.9 cm in diameter and 7.4 cm long) even smaller, you can detach the XLR module, connect the microphone head (4.1 cm) directly to one of Sennheiser's special remote capsule accessories, and then simply attach the XLR module to its end, out of shot of the camera. A further optimised feature for TV recordings is the dark grey Nextel® coating. This ensures that neither the microphones nor the accessories can cause troublesome reflections that might otherwise distract musicians, vocalists or speakers.

Compact design – huge frequency response

The frequency response of the new MKH microphones ranges from 10 to 60,000 Hz (MKH 8020) or 30 to 50,000 Hz (MKH 8040 and MKH 8050) – allowing them to record even the finest details for high sampling rate digital audio formats. The RF condenser principle means that inherent self-noise is extremely low, while the high sensitivity of the microphones guarantees that voices and instruments are captured in all of their nuances. In spite of this, the maximum sound pressure level is still impressively high, at 138 dB for the MKH 8020 and 142 dB for the MKH 8040 and the MKH 8050. Great attention was paid to achieving an accurate pick-up pattern over the entire frequency response, for example to allow instrument groups to be clearly separated.

In a class of their own: the accessories

The complete range of accessories includes floor stands, extension tubes, shock mounts, remote cables, table stands, ceiling mounts, clamps and various fixtures. In all accessories, the signal-transmitting components are systematically designed with two channels to allow stereo signals or dual mono signals to be processed.

In addition, a digital module that transmits audio signals according to the AES 42 standard (24 bit, up to 192 kHz sampling rate) is expected to be available in 2008. The module features a DSP unit for adjusting pre-

attenuation, rumble filter, compressor and limiter settings. These settings can also be remote controlled using a digital interface such as the DMI-2 from Neumann.

Sennheiser's Tonmeister Gregor Zielinsky: "The heart and soul of music is in the mid-range frequencies – and this is precisely where the new MKH microphones reproduce the sound particularly well and warmly without taking away from the unique clarity that these microphones are famous for. They have an impressive transparency in complex musical arrangements, especially when it comes to providing good differentiation between wind instruments and strings. Their fast transient response, also in the bass range, ensures a very powerful and dynamic sound reproduction and recordings that are musically outstanding."

The operating principle of the radio frequency condenser microphone

RF condenser microphones constitute a unique, sophisticated class of condenser microphones. Unlike standard condenser microphones, which require a high polarisation voltage for the capsule, RF condenser microphones use a comparatively low RF voltage generated by a low-noise oscillator. This voltage is modulated by the changes in capacitance produced by the sound waves that move the capsule diaphragm. Following the demodulation, a low-noise audio frequency signal with very low source impedance is available, and this can be used to directly drive bipolar transistors that produce less random noise than the field-effect transistors usually needed. As a result, RF condenser microphones have a wide dynamic range and an excellent low frequency response even with small capsules, which would normally only be possible using larger capsules. In addition, small capsules achieve a considerably better high frequency response than large capsules. A further benefit of RF condenser microphones is that, although the capsule is grounded, they possess a genuine fully floating, balanced output without the need to use a transformer.

Sennheiser's revolutionary symmetrical microphone capsule

Sennheiser's RF condenser microphones have a unique symmetrical push-pull transducer. Besides the normal back plate, this capsule is fitted with an additional front plate, with the diaphragm positioned between these acoustically transparent plates. The result of this balanced design is an unchanging acoustic impedance, extremely low distortion figures, a higher capsule output with much lower noise and thus a very clear signal.

Sennheiser electronic GmbH & Co. KG

Am Labor 1, 30900 Wedemark, Germany

Phone: +49 (5130) 60 00, Fax: +49 (5130) 60 03 00

www.sennheiser.com

Visit Sennheiser at the IBC, Hall 8, Stand 550.

The Sennheiser Group is one of the world's leading manufacturers of microphones, headphones and wireless transmission systems. A family firm established in 1945 and based in Wedemark near Hanover, the company recorded sales of over 356 million euros in 2006, 82% of which was generated abroad. Sennheiser employs over 1,800 people worldwide, around 55% of whom are in Germany. Sennheiser has manufacturing plants in Germany, Ireland and the USA and is represented worldwide by subsidiaries in France, Great Britain, Belgium, the Netherlands, Denmark (Nordic), Russia, Hong Kong, India, Singapore, Canada, Mexico and the USA, as well as through long-term trading partners in other countries. Also part of the Sennheiser Group are Georg Neumann GmbH, Berlin (studio microphones), K + H Vertriebs- und Entwicklungsgesellschaft mbH (Klein + Hummel studio monitors, installed sound) and the joint venture Sennheiser Communications A/S (headsets for PCs, offices and call centres).

You can find out the latest information on Sennheiser by visiting www.sennheiser.com or by contacting:

Sennheiser electronic GmbH & Co. KG
Press Office • Edelgard Marquardt
Am Labor 1 • 30900 Wedemark
Tel: +49 (5130) 600-329
Fax: +49 (5130) 600-295
e-mail: marquardt@sennheiser.com

fischerAppelt Kommunikation
Laura Pizzolante
Waterloohain 5 • 22769 Hamburg
Tel: +49 (711) 17-62723
Fax: +49 (711) 17-63333
e-mail: lp@fischerappelt.de

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