

Which inductive neck loops are suitable for Auracast/FM/IR receivers?

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Original article: [Which inductive neck loops are suitable for Auracast/FM/IR receivers?](#)

This article was translated from German to English using Google Translate.



There are significant differences in speech intelligibility between inductive neck loops. We tested currently available models.

Many available inductive neck loops are unsuitable for people with telecoil hearing aids because they exhibit a level drop in the high-frequency range, which is critical for speech intelligibility. While no inductive neck loop achieves the quality of a perfectly installed, permanently installed hearing system, significant differences are apparent in the details. Based on measurements using a dummy head (IEC 62489-1), the following ranking emerges:

First place: Geemarc iLoop+ – The test winner with integrated amplifier



Geemarc iLoop+

This model boasts the most linear frequency response in the high frequencies, thus offering the best speech intelligibility. A slight dip in the low frequencies is not critical for speech and is sometimes even advantageous. As the only device with an integrated amplifier and battery, the loop can be used independently of the headphone output power (smartphone, PC, tablet).

Advantages: Very good frequency response, works with any headphone output.

Disadvantage: As an active device, it requires regular charging.

Conclusion: The best choice for use with mobile devices without professional transmitter outputs.

Second place: Listen LA-438 – Optimized for professional receivers



Listen LA-438

The Listen LA-438 does exhibit a high-frequency roll-off, but it is less pronounced than other passive models (no integrated amplifier or battery). Its extremely low impedance (3–6 ohms at 1 kHz) is striking and can lead to distortion at maximum volume with weak headphone outputs. However, this is often not a problem for professional receivers, as the neck loop already generates a standard-compliant magnetic field (0 dB rel. 400 mA/m) with a low input signal of -12.7 dBu.

Advantages: Good frequency response, high level (volume).

Disadvantage: Only reliable with professional receivers; the headphone output must be able to be driven well to utilize the low impedance.

Conclusion: A good choice for professional Auracast, FM or IR receivers.

3rd place: Beyerdynamic/Televic IL 200 and Sennheiser EZT-3012

Both models exhibit significant high-frequency losses.

Beyerdynamic/Televic IL 200: Is more efficient and delivers a strong magnetic field (0 dB rel. 400 mA/m at an input signal of -6.4 dBu).



Beyerdynamic/Televic IL 200

Sennheiser EZT-3012: Requires a significantly higher input signal of +0.3 dBu for the same magnetic field.

Conclusion: The second-best choice for professional Auracast, FM, or IR receivers. The receiver's output must be properly driven (sufficient signal level).



Sennheiser EZT-3012

Not recommended: Monacor NL-90 and Williams AV NKL-001S

Monacor NL-90: The very strong drop in treble frequencies massively impairs speech intelligibility.



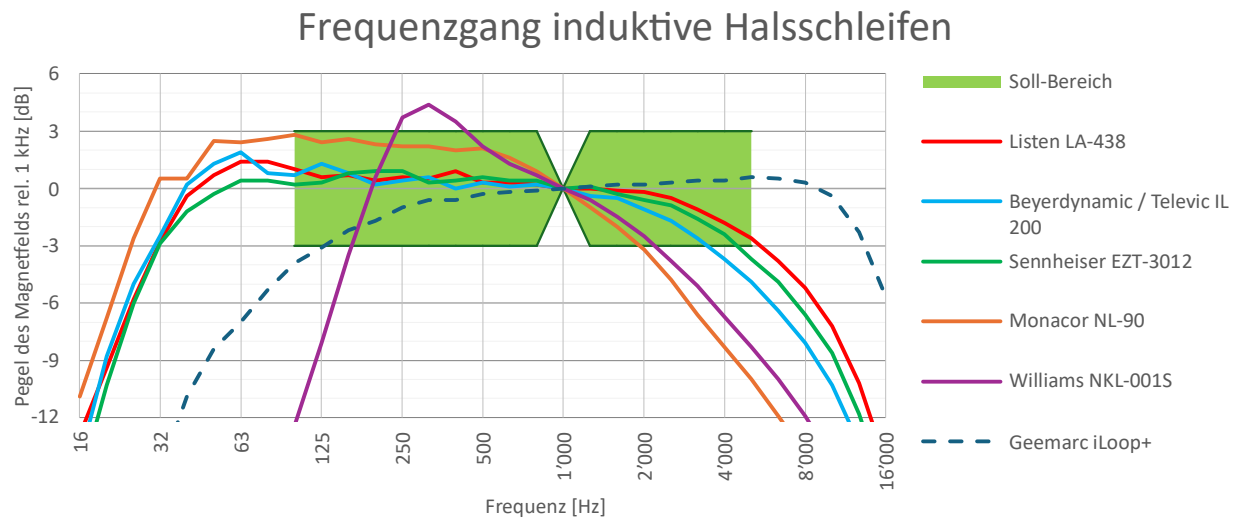
Monacor NL-90

Williams AV NKL-001S: Extremely unbalanced frequency response. The impedance rises continuously at higher frequencies, resulting in a highly source-dependent and inconsistent frequency response. In our tests, no headphone output produced an acceptable result.



Williams AV NKL-001S

Frequency response of the tested inductive half-loops



The green area shows the target range within which the frequency response of the inductive neck loops should be located, with the frequency range of 2000 to 4000 Hz being most important for speech intelligibility.

Note: All measurements were performed on a dummy head according to IEC 62489-1. In practice, different frequency responses may occur with non-linear headphone outputs.