



Further progress in wide-band induction magnetometer development

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The main problem in wide-band induction magnetometer (IM) design are impossibility to achieve a low level of intrinsic noise in the entire frequency band: using chopper amplifier gives us better noise level at low frequency (less than several hundred Hz), choice of a voltage operational amplifier gives us better noise level at higher frequency (more than 300-500 Hz) and the inability to match the sensor and amplifier in a wide frequency band. The example of this is MFS-06 magnetometer which has two switchable bands. The goal of the present report is to introduce the new design of wide-band IM which operates in frequency band from 1 mHz to 10 kHz. The study directions were concentrated on the ways and possibilities to find the better matching between sensor and amplifier in a wide frequency band. In the result of modeling and experimental research how to get the best possible magnetometer noise level a composite amplifier was developed having optimal matching possibilities in mentioned band. Construction details, tests results and technical specifications of the wide-band IM named LEMI-152 are presented.