Abstracts

New applications of wirelessly interrogable passive SAW sensors (1998 Vol. II [MWSYM])

A. Pohl, A. Springer, L. Reindl, F. Seifert and R. Weigel. "New applications of wirelessly interrogable passive SAW sensors (1998 Vol. II [MWSYM])." 1998 MTT-S International Microwave Symposium Digest 98.2 (1998 Vol. II [MWSYM]): 503-506.

By applying passive wirelessly interrogable SAW sensors, many physical parameters can be measured. Up to now all SAW sensor applications are performed by taking a snapshot of the sensor's response periodically, evaluating the measurand assumed to be quasistationary. Therefore the upper limit for the rate of sampling of a mechanical effect by the sensor is the interrogation rate. Usually it is in the range of 100 kHz or less and measurands with a periodicity of up to a few tenths of kHz can be sampled satisfactory. Even audible vibrations of machine parts can be monitored. Here, the behaviour of the sensors for dynamic measurands is discussed. Advanced applications for the measurement of vibration, acceleration, for dynamic pressure measurement in mechanical engineering, for example for monitoring the tyres of cars are presented. Measurement results from an experimental setup are given.

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