Abstracts

A wireless pressure measurement system using a SAW hybrid sensor

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A pressure measuring system based on surface acoustic wave (SAW) sensors is presented. Since SAW sensors are powered by the energy of the RF field no battery is required, which is a major drawback of conventional microcontroller based telemetry systems. A successful combination of a SAW reflective delay line with a high-Q capacitive pressure sensor is shown. With a new way of matching the sensor impedance to the SAW reflector impedance both a high signal-to-noise ratio and a high signal dynamic are achieved which supports accurate signal evaluation. As an example of realization the prototype of a tyre pressure sensor unit is presented.

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