Abstracts

A wireless pressure-measurement system using a SAW hybrid sensor

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A pressure-measurement system based on surface-acoustic-wave (SAW) sensors is presented in this paper. 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 the pressure sensor unit is presented.

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