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# MICRO-ELECTROMECHANICAL SENSING SYSTEMS & PROCESSORS

## HARDWARE, CIRCUITS, & SENSORS

Micro-electromechanical sensors for the detection of low magnetic fields and radiofrequencies using less than 10 nW of power.

### TECHNOLOGY TYPE

Biosensors  
MEMS  
Internet of Things

### STAGE OF DEVELOPMENT

- Proof of concept established through performance verification of initial prototype.  
  
- Ongoing research to optimize the sensor.

### IP PROTECTION

#### U.S. Utility Patent Pending

Very Low Power  
Microelectromechanical  
Devices for the Internet of  
Everything  
*US20170148592A1*

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Reference Number: U-5916

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### TECHNOLOGY SUMMARY

Sensors based on micro-mechanical devices typically have small stand-by power consumption, which makes them ideal for use in the Internet of Things, where a multitude of sensors are required to monitor the status of every system. These sensors continue to decrease in size, use less energy, and cost less.

The *Micro-electromechanical Sensing Systems & Processors* sense low magnetic and electric fields, as well as small vibrations. The devices can also perform amplification, logical operations, spectral analysis, rectification, and detection of radiofrequency signals using less than 10 nW of power. Due to their low power usage and high sensitivity, these sensors are well-suited for remote sensing and implantable medical device applications.

### FEATURES AND BENEFITS

- Decreases power usage.
- Improves sensitivity for magnetic fields and radiofrequency signals.
- Increases resolution.
- Demonstrates potential for use in pacemakers, brain mapping, security, and detection systems.

### INVENTOR PROFILE

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