ZERO-QUIESCENT POWER TRANSCEIVER

Tech ID: 25149 / UC Case 2015-207-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,257,002	04/09/2019	2015-207

BRIEF DESCRIPTION

Trillions of sensors are envisioned to achieve the potential benefits of the internet of things. Realizing this potential requires wireless sensors with low power requirements such that there might never be a need to replace a sensor's power supply (e.g. battery) over the lifetime of that device. The battery lifetime of wireless communications devices is often governed by power consumption used for transmitting, and therefore transmit power amplifiers used in these devises are important to their commercial success. The efficiencies of these power amplifiers are set by the capabilities of the semiconductor transistor devices that drive them.

To achieve improved efficiencies, researchers at UC Berkeley have developed a novel method and structure for realizing a zero-quiescent power trigger sensor and transceiver based on a micromechanical resonant switch. This sensor/transceiver is unique in its use of a resonant switch ("resoswitch") to receive an input, amplify it, and finally deliver power to a load. This novel technology also greatly improves short-range communication applications, like Bluetooth. For example, with this technology, interference between Bluetooth devices would be eliminated. Also, Miracast would work, despite the presence of interfering Bluetooth signals.

SUGGESTED USES

This technology has the potential to play a key role in the cost-effective implementation of:

- Massive sensor networks
- The internet of things
- Bluetooth devices

ADVANTAGES

- No power is consumed while listening in standby
- Smaller power threshold needed to receive a signal and react
- Enables sensor wireless communication performance many times better than presently available

RELATED MATERIALS

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- High Electromechanical Coupling Disk Resonators

CONTACT

Michael Cohen
mcohen@berkeley.edu
tel: 510-643-4218.

INTRODUCING
UC TechAlerts
New technology matches delivered to your email at your preferred schedule
SEARCH SAVE SEARCH
Learn More

INVENTORS

- Nguyen, Clark Tu-Cuong

OTHER INFORMATION

CATEGORIZED AS

- **Communications**
  - Internet
  - Networking
  - Wireless
- **Computer**
  - Hardware
- **Sensors & Instrumentation**
  - Biosensors
  - Environmental Sensors
  - Position sensors
- **Transportation**
  - Other

RELATED CASES

2015-207-0

- Micromechanical Frequency Divider
- RF-Powered Micromechanical Clock Generator
- Active Resonator System with Tunable Quality Factor, Frequency, And Impedance
- Piezoelectric Filter with Tunable Gain

Berkeley
UNIVERSITY OF CALIFORNIA

University of California, Berkeley Office of Technology Licensing

2150 Shattuck Avenue, Suite 510, Berkeley,CA 94704

Tel: 510.643.7201 | Fax: 510.642.4566

https://ipira.berkeley.edu/ | otl-feedback@lists.berkeley.edu

© 2016 - 2019, The Regents of the University of California

Terms of use | Privacy Notice