

About us

SPARK Microsystems offers a unique wireless transceiver technology that achieves **40x more energy efficiency, 60x lower latency, and 10x more data throughput over** BLE and 600 times better than ZigBee on power.

Our technology **enables battery-less operation** of when paired with energy harvesting technologies.

The Problem

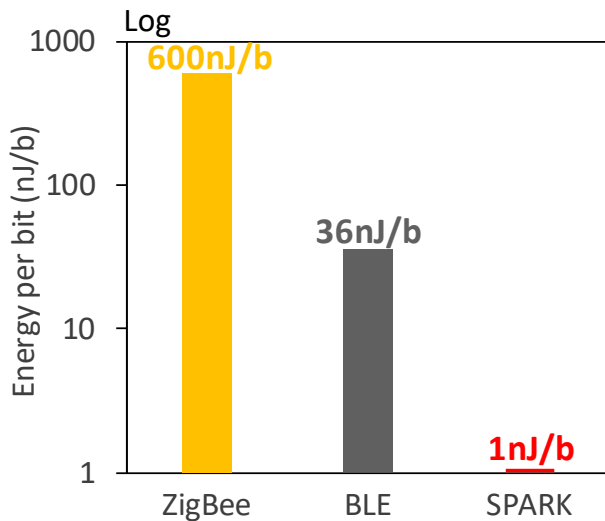
The battery life of wireless devices is insufficient for many sensor applications, leading to overly frequent recharge cycles, limited connectivity, and bulky batteries or costly maintenance. In addition, long latency makes wireless inadequate in applications requiring real-time communications.

Many customers require more intelligence, tracking, control and analytics of their equipment and devices, however, installation and cost can be very prohibitive. This makes the decision to install IoT tags or sensors a difficult one.

Many solutions out there today at expensive and difficult to install.

The industry is looking for a solution that is reliable, easy to maintain, and reconfigurable.

Energy Efficiency



Specifications

- Ultra-low power consumption
 - 1.5 nJ/bit energy efficiency (1 mW @1 Mbps)
 - 1.8 to 3.3 V supply,
 - 55 nA Hibernate, 750 nA deep sleep (with timing)
- Scalable data rate at up to 10 Mbps payload
- Ultra-short wireless latency below 50 μ s @ 1 Kb
 - Down to 3 ms for uncompressed CD quality audio
- 3-9 GHz configurable ultra-wideband spectrum
- 10 dBm TX power
- 50 m range @3 Mbps; 100 m range @ 500 Kbps

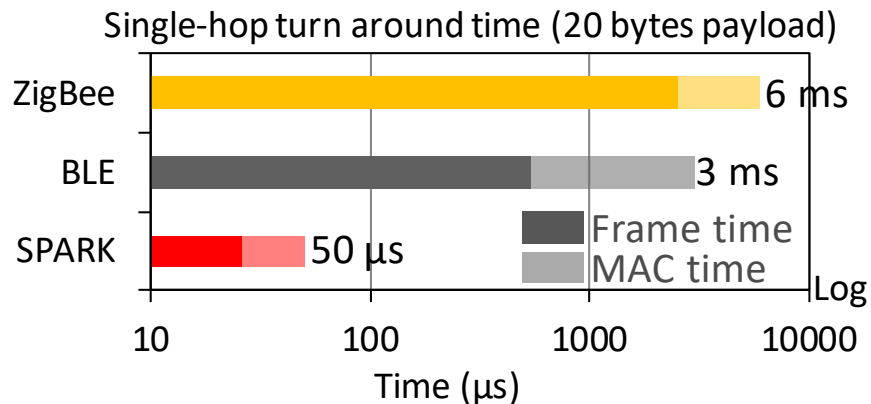
The Solution

The new SR1000 device family from SPARK Microsystems can communicate with such low energy that it can be powered by a simple low cost solar cell or other energy harvesting device and use a capacitive cell for energy storage. This eliminates wires and batteries, and simplifies the installation process and extends the life of wireless devices.

The SR1000 family can accept other machine input, such as engine hours, temperature, humidity, or other sensor input. Moreover, the communication latency of the SPARK radio is so short that it can be used in the feedback loop of control systems such as in robotics to remove the need for wiring or complex timing management. The ultra low latency also provides the capability to resend packets to improve link reliability.

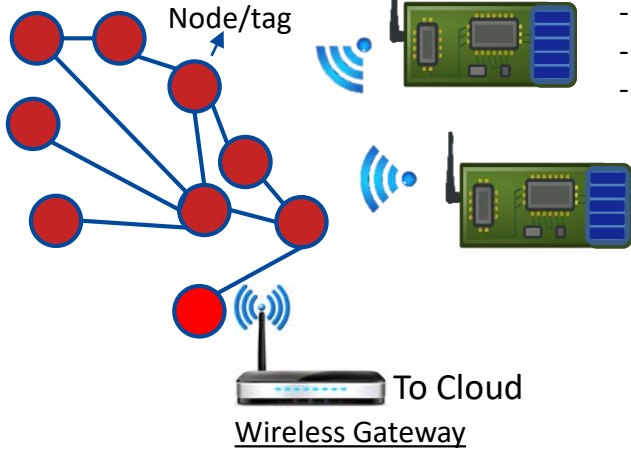
SPARK can be deployed in a mesh network to enable long range and agile short-latency communications within dense low-power networks.

Latency



Example Solution

SPARK Mesh Network







Sensor Node

- SPARK Radio
- Sensors
- Solar cell and capacitor
- Microprocessor

Applications Examples

- Equipment/parts tracking
- Wireless Sensor data
 - vibration
 - distance
 - temperature
 - Pressure
 - Gas content
 - Etc.
- Control Systems

Top Differentiators

-  Low latency
-  Low power (battery-less)
-  Deep mesh capability
-  Non-Interference/reliability



Wireless Range

