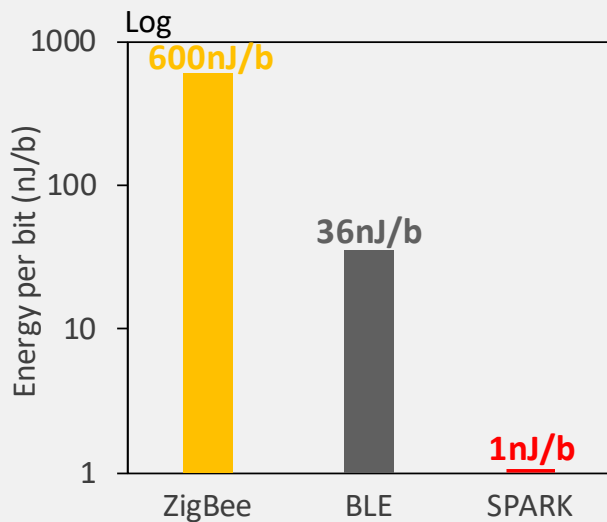


About us

SPARK Microsystems offers a unique & innovative short range (50-100 meters) fully integrated wireless transceiver technology that achieves **40x more energy efficiency, 60x lower latency, and 10x more data throughput** than BLE.

Our technology **enables battery-less operation** of wireless devices such as sensors when paired with energy harvesting technologies.

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
- 80 dB link budget
- 50 m range @3 Mbps; 100 m range @ 500 Kbps

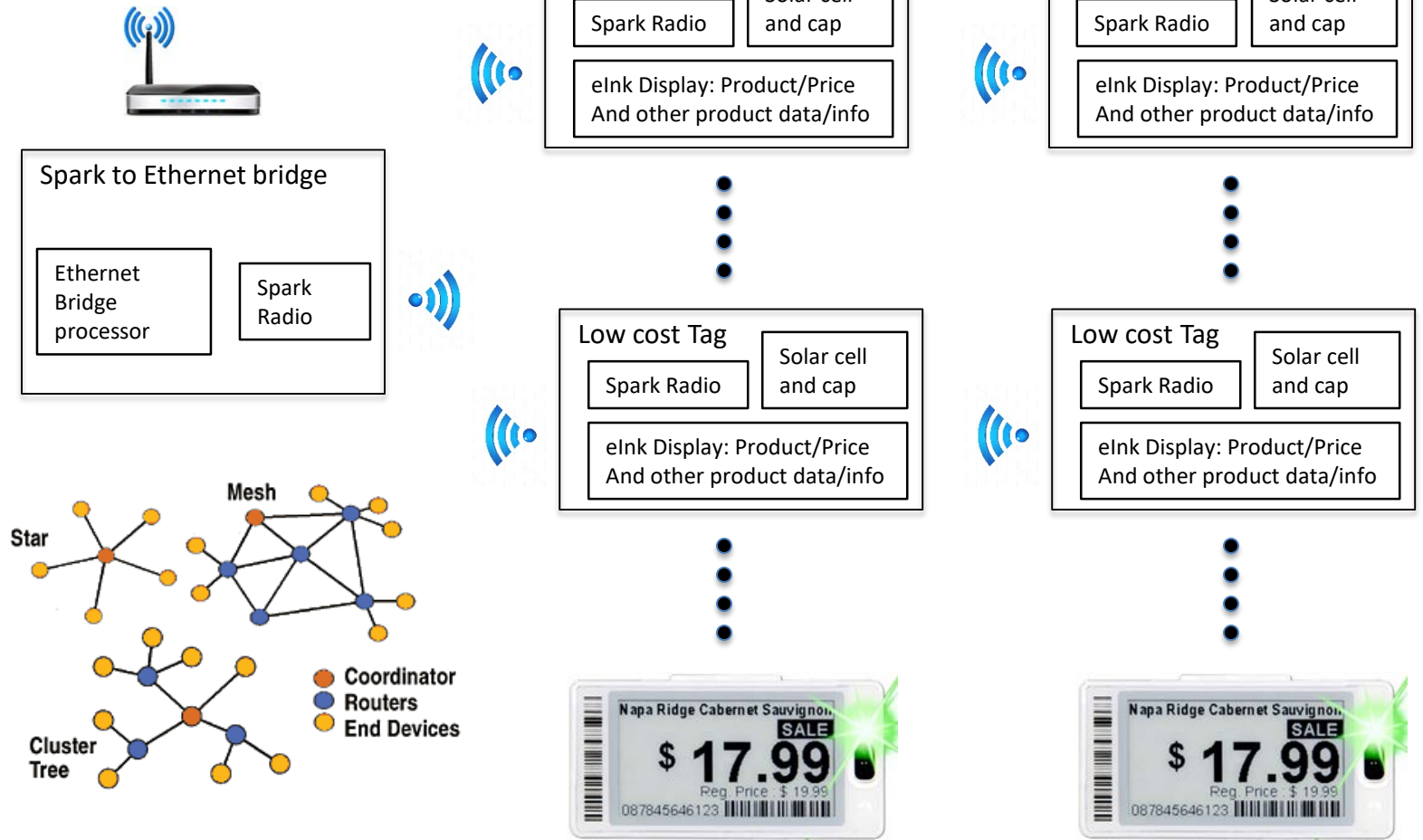
The Problem

Every store would like to have electronic tags for automated pricing and product updates. The biggest problem is the cost of the tag or the cost of installation. Many RF wireless solutions require power hungry wireless solutions that either require a full electrical power installation or batteries that need to be swapped out too often. In the case of an IR solution the installation is complex and expensive involving many infrared ceiling towers. In either case, the cost is too expensive, either upfront for the installation or the maintenance with all the batteries.

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 with a capacitive cell for energy storage thus eliminating wires and batteries, vastly simplifying the installation process and extending the life of the tag indefinitely. Unlike current tags, no infrared towers need to be installed reducing installation cost requirements significantly. The SPARK radio can be used in a mesh throughout the store, each tag relaying updates to the next tag, and so on. There is no limit to the life of the tag, providing a solution that yields a high return on investment. All you need is a Spark enabled gateway in the front office to enable the entire mesh across the store or warehouse.

Example Solution



Ranging

- In addition to communication, the SPARK technology lends itself to coarse or highly accurate location ranging based on time-of-flight with an accuracy better than 30 cm. Using three or more fixed SPARK radio chips, the location can be determined.

Flexibility

- Can support device-to-device, star, and mesh network configurations. These features allow for increased connectivity and reliability, as well as better coverage of large warehouses and department stores.
- Can multiplex thousands of devices.

Additional Markets

- Internet-of-Things
- Battery-less systems
- Medical and healthcare
- Health and fitness
- Industrial and automation, M2M
- Structural health monitoring
- Smartphones and tablets
- Smart agriculture
- Smart homes / buildings / cities
- Streaming data /audio / video
- Wireless peripherals
- Wearables