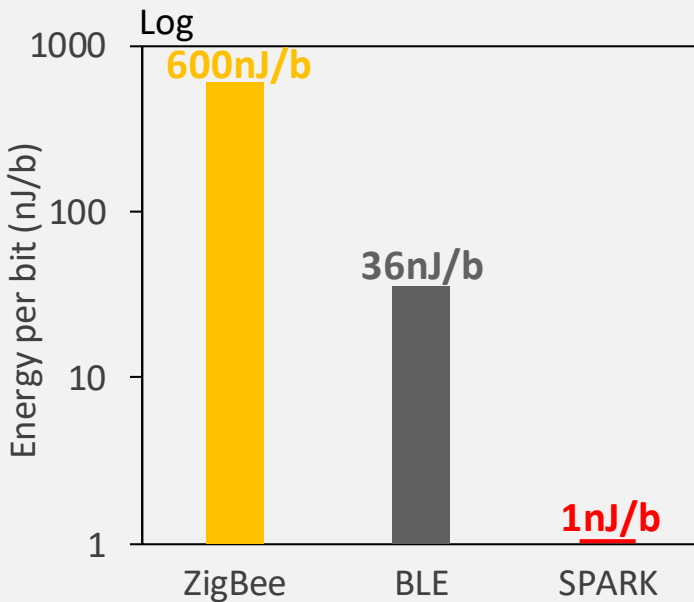


**About us**

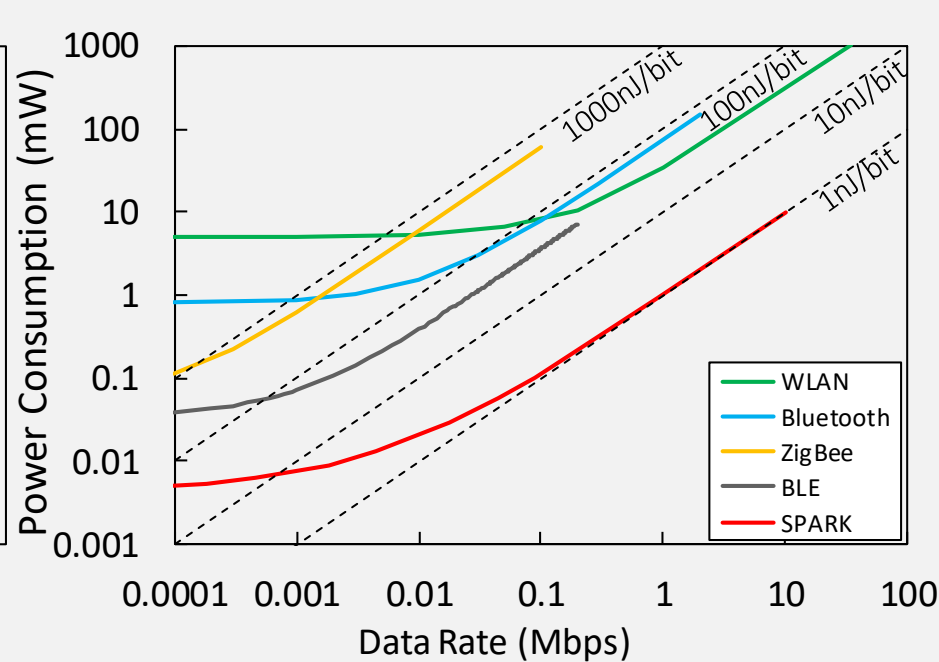
SPARK Microsystems offers a unique & innovative short range (50 meters) wireless transceiver technology that achieves **35 times better energy efficiency** than BLE and also transmits data with a **latency that is 60 times shorter** than BLE. It also supports a **faster data rate** (10 Mbps).

Our technology significantly **extends the battery life of electronics**, and **enables battery-less operation** of wireless devices such as sensors when paired with energy harvesting technologies.

**Energy Efficiency**



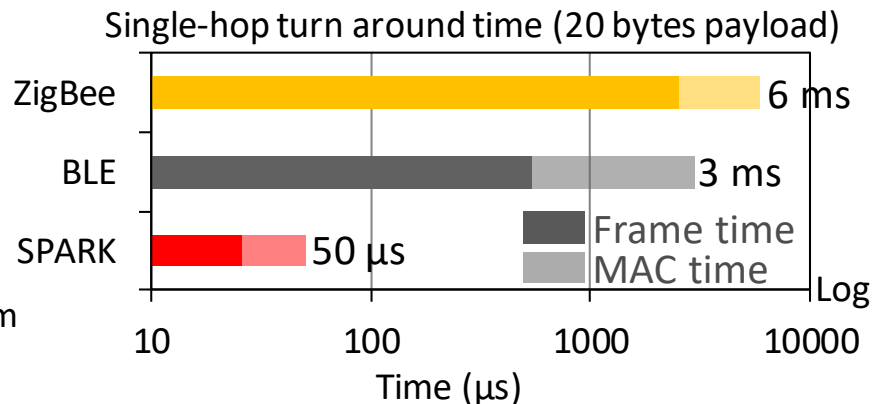
**Power Consumption**



**Specifications**

- Ultra-low power consumption
  - ▶ <1 mW at 1 Mbps
  - ▶ < 1 nJ/bit energy efficiency
  - ▶ 1.8 to 3.6 V supply, 700 nA sleep current
- Scalable data rate (supports up to 10 Mbps)
- Ultra-short latency below 50 μs
- 3-6 GHz configurable ultra-wideband spectrum
  - ▶ 11 dBm TX power, 50 meters range

**Latency**



**Target 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

### **Security and reliability**

- Completely novel wireless transceiver architecture.
- Operates in the frequency range of 3-6 GHz, and uses a method of transmission that prevents information from being readily intercepted.
- Extremely low EMI: the transmitted signal appears as noise to other typical radio systems. This also enables more secure communications that are difficult to intercept.
- Inherent rejection of all other in-band IoT protocols ensures robust communications in high interference environments, such as dense urban areas.
- Enhanced link reliability, as the signal does not suffer from fading effects seen in typical IoT systems.
- 50 meters range capability.

### **Ranging**

- The technology lends itself to coarse or highly accurate location ranging based on time-of-flight: a two-way ranging system can be integrated with the SPARK radio to make it capable of estimation of the distance between two devices with an accuracy better than 10 cm.
- Using three fixed SPARK radio chips, the exact 3D location of another moving/fixed SPARK radio chip can be determined.
- The ranging system has all of the advantages of the SPARK radio, such as immunity to interference and multi-path fading, low power consumption, long range, etc.

### **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 areas.
- The ultra-low latency and energy efficiency of the SPARK radio enables robust mesh network capabilities when compared to other protocols.
- Can multiplex hundreds/thousands of users/devices in the same space.
- Can be used as an advanced low power mode with BLE, Zigbee or other IoT protocols.
- The high frequencies allow for the SPARK radio to be compatible with small antenna sizes to enable compact solutions.

### **Target Markets**

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