



SPARK Microsystems Overview

Q1, 2024



We live and breathe Ultra-wideband Communication

Focused on delivering transceivers for high-performance, ultra-low power, next generation Personal Area Networks

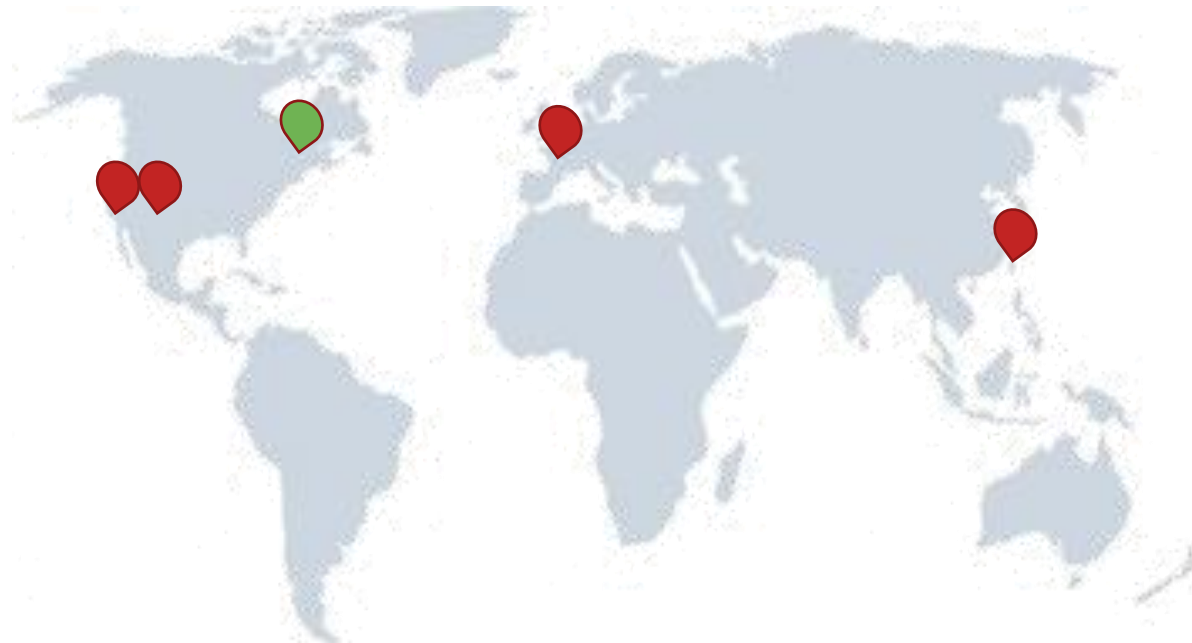
Headquarters: Montréal, Canada

Patents: 40 granted, 31 pending

Direct offices

- Silicon Valley
- France
- Taiwan

Worldwide rep. & distributor channel



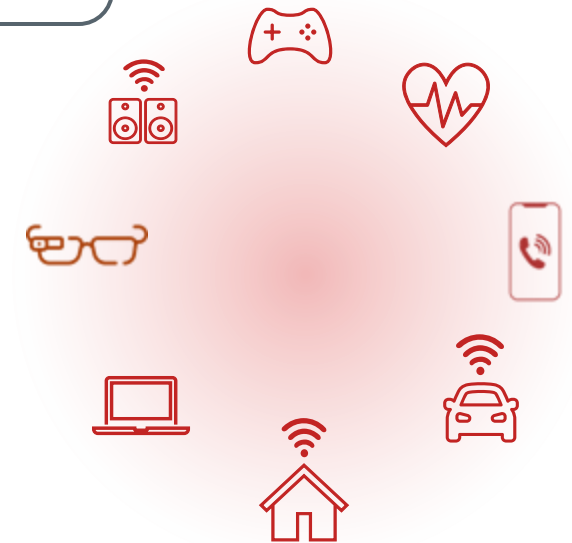
SPARK UWB: The future of short-range networks



Existing wireless technologies
are hitting a brick wall



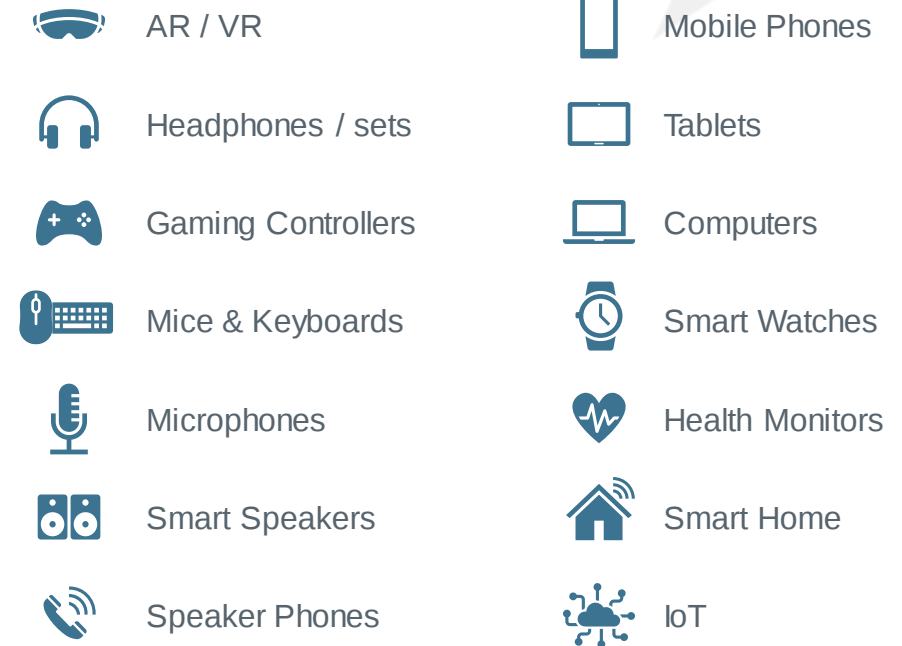
- *Low Latency*
- *High Data Rate*
- *Ultra-low Power*
- *Low Power Positioning*



SPARK UWB Scope



SPARK UWB APPLICATIONS



SPARK UWB vs IEEE 802.15.4z UWB



DESIGNED FOR DATA TRANSMISSION

- **Ultra-low power** (lower than BLE)
- **10x faster** than Bluetooth
- **Low latency** (better than Bluetooth and WiFi)
- Good ranging (ToF)
- **Excellent multi-path** robustness
- **Very fast startup** and synchronization
- **Low cost** (simple architecture)



DESIGNED FOR RANGING & POSITIONING

- **High power** consumption (> Bluetooth)
- **Very slow** data transmission
- **Poor latency**
- **Excellent ranging** (ToF + Angle of Arrival)
- **Poor multi-path**
- **Slow startup** and synchronization
- **High cost** (complex architecture)

SPARK vs other wireless standards

	 SPARK	 Bluetooth® Bluetooth® Low Energy	
Data Throughput	Fast	Slowest	Fastest
Data Latency	Lowest	Long	Variable
Power	Lowest	Low	Highest
Signal Distance	In Room*	Multi-room	Whole House
Ranging	Best	Poor	Poor
Multi-path	Best	Poor	Poor

* For Personal Area Networks (PANs), shorter signal distance is desirable to avoid congestion and interference with other PANs

SR1000 series UWB transceivers

SR1010



SR1020

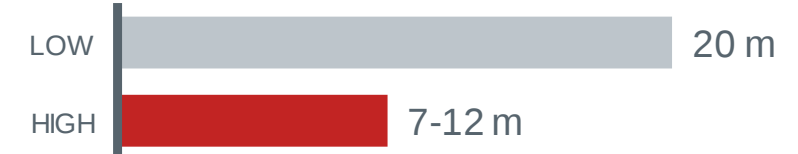


FREQ. RANGE	3.1 GHz – 5.8 GHz	6.0 GHz – 9.3 GHz
SYMBOL RATE	20.48 Mbps	
CHANNEL BW	Reconfigurable 500 MHz – 3 GHz	
Tx ENERGY	up to 3 dBm / 20 MHz tunable	
Rx SENSITIVITY	-75 dBm / 20 MHz	
INTERFACE	up to 50 MHz SPI	
XTAL	Single 32.768 kHz	
POWER	1.8 V – 3.3 V supply voltage	
active	0.34 (Rx) / 0.10 (Tx) mA/Mbps	0.39 (Rx) / 0.12 (Tx) mA/Mbps
idle	250 μ A (PLL on, DC-DC on)	
deep sleep	920 nA (PLL off, RTC on)	
shutdown	55 nA (RTC off)	
PACKAGE	28 pin, 4 mm x 4 mm QFN	
AVAILABILITY	Production	

RANGE

ACTUAL DATA RATES VARY DUE TO MULTIPLE PARAMETERS

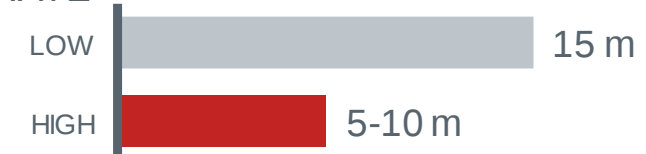
DATARATE



SR1010

3.1 GHz – 5.8 GHz

DATARATE



SR1020

6.0 GHz – 9.3 GHz

SPARK transceiver roadmap



SPARK enabled products



4K / 8K Mouse
REFERENCE DESIGN

- Very low latency (290 μ s avg.)
- Ultra-low power



KEYBOARDS



GAMING
CONTROLLERS



JOYSTICKS



AR / VR



Golion Headset
REFERENCE DESIGN

- 5 ms very low latency
- High quality uncompressed audio



CONTENT
CREATION MICS



SURROUND
SOUND



SMART
SPEAKERS

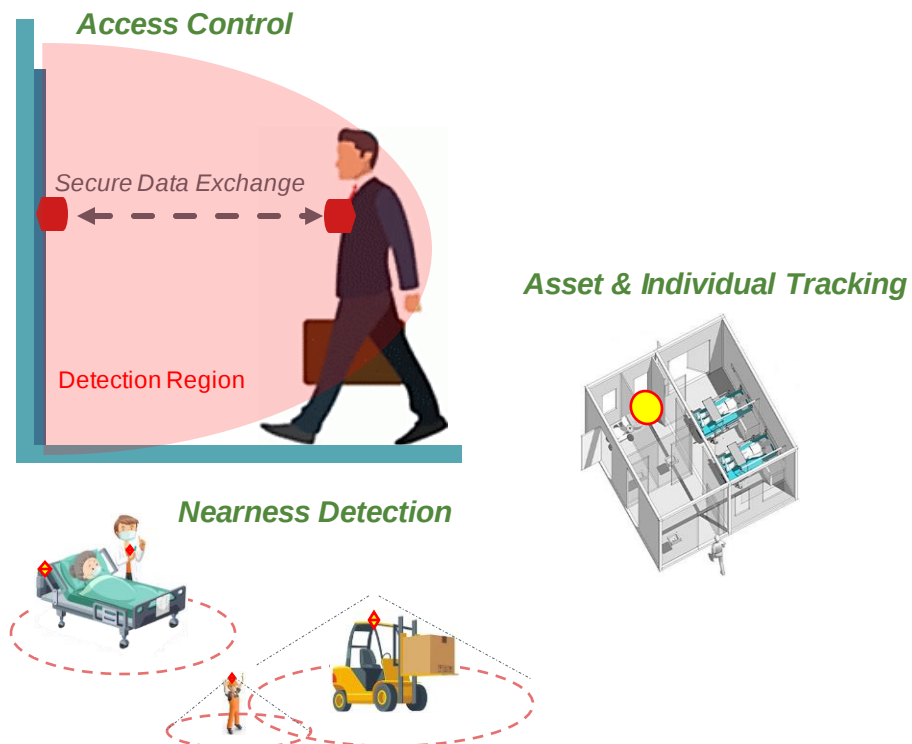


CONFERENCING
SYSTEMS

IoT

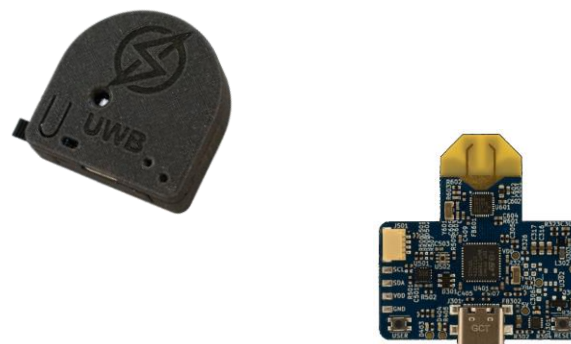
Presence Detection

- Access Control
- Nearness Detection
- Tracking



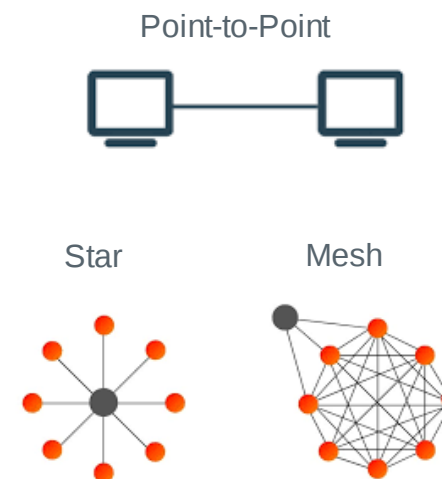
Wireless Sensors

- Low power, energy harvested
- Responsive, low latency
- I-IoT Applications
- Smart Home



Data Link

- Point-to-point
- Star or mesh network
- High data rate compared to bluetooth



Sonus Faber Chooses SPARK Microsystems' UWB Wireless Tech for Low Latency Home Audio Speakers

Oct. 5, 2023

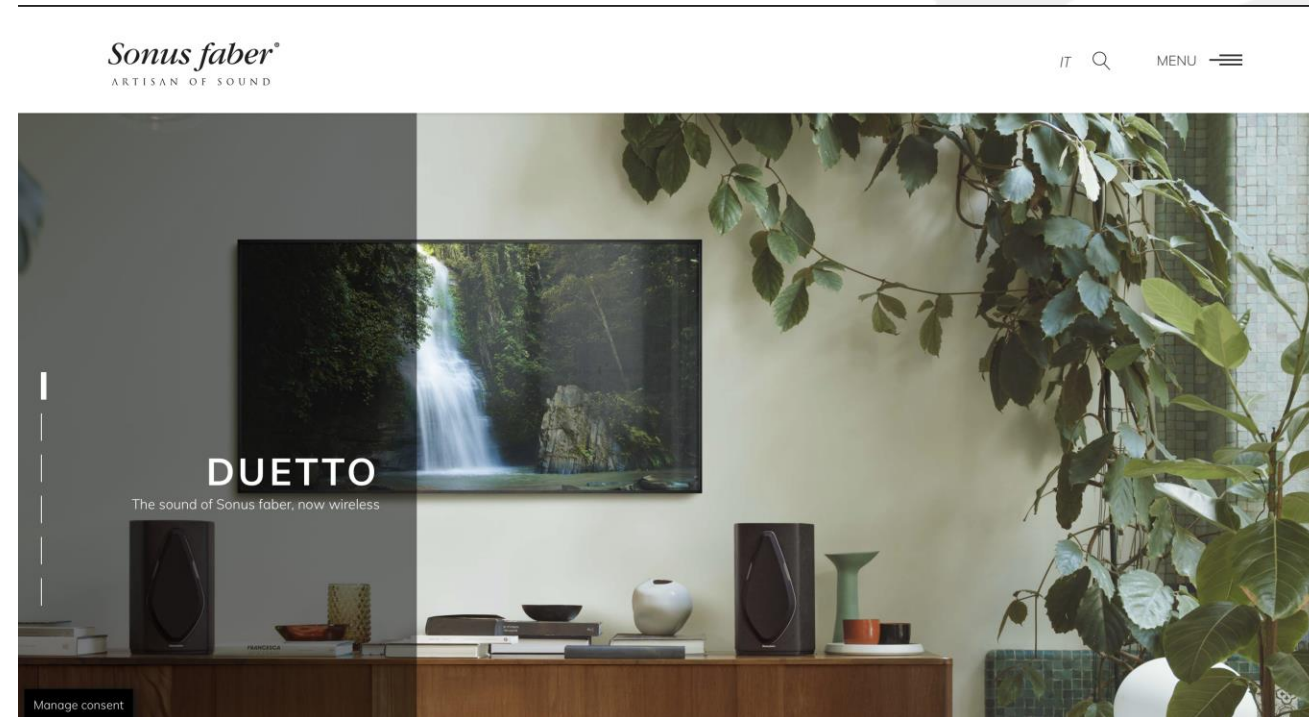
Sonus faber
ARTISAN OF SOUND



ULTRA WIDE BAND

Duetto is fixed with Ultra Wide Band (UWB) technology that enables communication between the two speakers. The wireless transmission avoids latency and interference in the connection by other home networks. This technology also guarantees a wide frequency spectrum to send data signals at high speeds.

Duetto is Sonus faber's first active stereo wireless loudspeaker system. Duetto combines 40 years of high-fidelity audio engineering with Sonus faber's signature design queues in a compact system.



Platonum Selects SPARK Microsystems' UWB Tech for its Deep Augment Solution

April 12, 2023



SPARK UWB

“The Platonum watch is based on unique engineering, making it a visionary product enabled by the short-range data streaming capabilities of SPARK’s UWB technology.”

SPARK’s UWB technology was designed into the watch because its capabilities are an enabler to the vision of our product,”

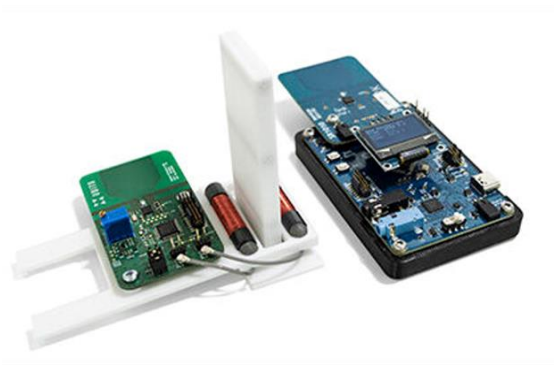
“Platonum’s new Deep Augment™ watch represents a true revolution in consumer lifestyles and is creating a new market segment of cutting-edge watches,” ...



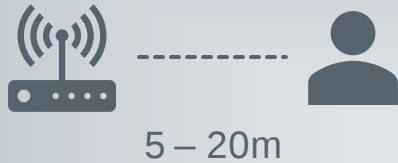
**Presenting The
PLATONUM® Brand,
Your Future Companion**

IoT: Battery-less Door Sensor

- Wiegand-Effect-Powered Wireless
- Movement generates energy
- SPARK's ultra-low power UWB trans
- No batteries required



SHORT RANGE



HIGH DATA RATE



> 10x faster than BLE



ULTRA-LOW POWER

up to 40x lower than BLE

RESPONSIVE GAMING



SPARK
ULTRA-WIDEBAND

ULTRA-LOW POWER RANGING AND PROXIMITY DETECTION



LOW LATENCY

< 25 μ s for 1 kbit



USB 3 FRIENDLY

USB 3 does not interfere with UWB

REDUCED CONGESTION



less overlap with adjacent systems

THANK YOU