



DETERMINISTIC WIRELESS™. DELIVERED.

Connectivity Without Compromise for
Real-Time Intelligent Systems

TECH WATCH with Claus Hetting, Aug 2026



The Existing Wireless Layer Was Never Built for AI and Emerging IoT Devices

DETERMINISTIC WIRELESS FOR REAL-TIME INTELLIGENT SYSTEMS



By 2040, **hundreds of billions** of devices will be connected wirelessly.



Struggles with **power consumption, latency, congestion** and **data rates**.



Big **trade-offs** are made by designers, and wires often remain the only solution.



New categories of devices are impossible to introduce. Product **innovation is stifled**.



This is where a purpose-built layer complements the existing wireless stack.

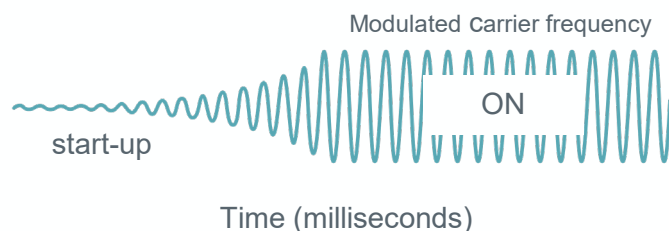
SPARK adds the missing layer

The Physics: Narrow Band (Wi-Fi, BLE, 802.15.4 etc.) and Ultra-Wideband

Narrowband Wireless Solutions

Narrowband Radio

Wi-Fi, Bluetooth, 802.15.4 etc.



- Higher transmit power
- Slow startup / initialization
- High latency
- Poor ranging (signal strength)
- Poor multipath and interference robustness
- Longer range
- Higher throughput (Wi-Fi)



Ultra-wideband Solution

Impulse Radio

Ultra-wideband



- Lower transmit power
- Fast startup / initialization
- Very low latency
- Excellent ranging (time of flight)
- Very good multipath and interference robustness
- Shorter Range
- Lower throughput than Wi-Fi



Foundation layer that makes Deterministic Wireless possible

THE FUTURE IS SPARK Low Energy UWB (LE-UWB™)

The only **wireless technology** to deliver:

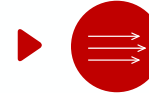
ULTRA-LOW LATENCY
Sub-millisecond, deterministic - every packet, every time



ULTRA-LOW POWER
Years of battery life for always-on, always-sensing devices



HIGH THROUGHPUT
Real sensor data, uncompressed, at high data rates



ROBUST CONNECTIVITY
Stable performance in congested, real-world RF environments



Low-power time-of-flight (ToF) ranging

Seamless coexistence with Wi-Fi & BLE



SPARK LE-UWB APPLICATIONS



Immersive Experiences

AI Wearables, AR/VR Glasses, Theme Parks, Casinos, Presence Detection



Gaming Peripherals

Mouse, Keyboard, Headset, Controller, Gaming Pads



Specialized IoT

Medical, Industrial, Robotics, Logistics, Presence Detection, Other Edge AI



Mobile & Accessories

Mobile Devices, Smart Watches, Trackers, Connected Health

BROAD MARKET POTENTIAL

SPARK LE-UWB Fits Alongside BLE, Wi-Fi and Legacy UWB

Deterministic short-range wireless with ultra-low power, predictable latency, efficient data transfer and robust coexistence.

VS BLE

Power **25× lower consumption**

Latency **60× lower latency**

Data rate **40× higher max rate**

Robustness **Better interference robustness**

SYSTEM OUTCOME

Extended battery life · real-time responsiveness · faster transfer

VS Wi-Fi

Power **100× lower consumption**

Latency **5× lower & predictable**

Throughput **Energy-optimized**

Congestion **Better mitigation**

SYSTEM OUTCOME

Dependable responsiveness · extended battery life · stable links

VS LEGACY UWB 802.15.4z

Power **100× lower consumption**

Latency **Optimized for low latency**

Use case **Data communication + ranging**

Cost **5× lower implementation cost**

SYSTEM OUTCOME

Low-power ToF ranging + dependable data transfer · larger market potential

LE-UWB complements BLE and Wi-Fi; it wins where short-range systems need deterministic power, latency, RF behavior and throughput.

LE-UWB is Making Applications Possible

When devices need to sense, infer, and act in real time, the margin for error collapses and **existing wireless cannot keep up.**



Gaming Peripherals

- <150µs click latency
- True 8kHz polling
- Robust connectivity
- Ultra-low power
- 10-20Mbps data rate



High Quality Audio & Hearables

- 96kHz/24-bit uncomp audio
- <5ms latency
- Wire-like synchronization
- Ultra-low power



Specialized IoT (Healthcare, Industrial)

- >10 years battery life
- Ultra-low latency
- Robust connectivity
- Accurate location



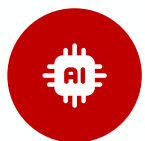
AI Wearables

- < 3ms audio latency
- < 1µs sync jitter
- > 10–20 Mbps data rate
- Robust connectivity
- Ultra-low power



Every one of these requires a perfect balance. **No compromises are possible.**

THE WIRELESS WORLD HAS CHANGED.



Real-time, intelligent systems have raised the wireless bar. The RF environment is more congested.



The trade-off era is over. Power, latency, throughput, robustness - **designers no longer have to choose.**



SPARK's LE-UWB wireless is here. **In production. In your hands. Providing Deterministic Wireless™.**



UWB complements and co-exists with Wi-Fi and BLE.

**No compromises are possible...
Deterministic Wireless™ is needed**

