

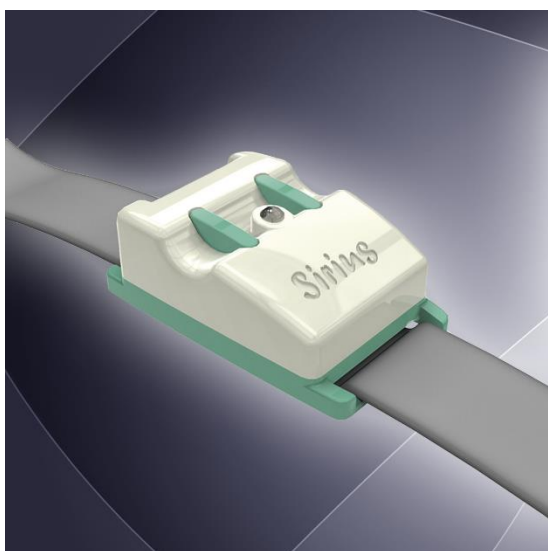
# n-Core<sup>®</sup> Sirius Quantum

Device for the development and deployment of IEEE 802.15.4/ZigBee networks

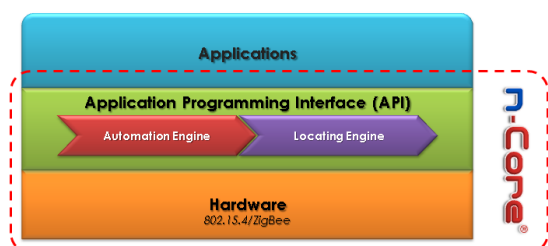
## Overview

The all-new **Sirius Quantum** is a radio-frequency device that offers a complete solution for deploying **wireless sensor networks and real-time locating systems** based on the IEEE 802.15.4/ZigBee™ international standard in a simple and fast way.

Its tiny design provides an extraordinary versatility to suit a wide range of applications, especially those where **mobility and miniaturization** are key factors. It offers several communication ports and I/O interfaces, via the *n-Core Sirius IOn*, that allow integrating a great number of external devices, such as sensors, actuators or even computers, among many others.



The new **Sirius Quantum** device is part of the **n-Core platform**, developed by Nebusens. The n-Core platform offers a complete set of hardware and software tools to fit all your necessities when developing and deploying wireless networks based on the international standard IEEE 802.15.4/ZigBee™.



## Main Features

- High scalability thanks to the implementation of the IEEE 802.15.4/ZigBee™ international standard.
- Very small form factor.
- Software selectable U.FL and ceramic antennas.
- Read range up to 500 meters.
- Sensitivity up to -100dBm.
- Maximum output power up to +22dBm.
- High precision 3-axis accelerometer.
- Fully compatible with the *n-Core Sirius* family.
- I/O interfaces (via HDMI type D connector):
  - Digital I/O ports.
  - ADC.
  - General-purpose IRQ input.
  - SPI, I<sup>2</sup>C and UART serial interfaces.
  - Power supply.
- Programming and debugging interfaces:
  - JTAG and USB (via *Sirius IOn*).

## Benefits & Applications

The all-new *Sirius Quantum* is a full-featured wireless device that facilitates the development of different types of custom applications. It is a multipurpose solution with **an outstanding potential to create almost any kind of application**, especially where mobility of users and objects is a key factor. The *Sirius Quantum* is ideal for use in a multiple variety of applications, for example:

- Home automation.
- Industrial automation.
- Telemonitoring and telemetry.
- HVAC.
- Environmental monitoring and control.
- Security and surveillance applications.
- Logistics and asset tracking.
- Real-time locating.

These and other applications can be quickly deployed by using the dynamic and scalable mesh topology of the ZigBee™ international standard.

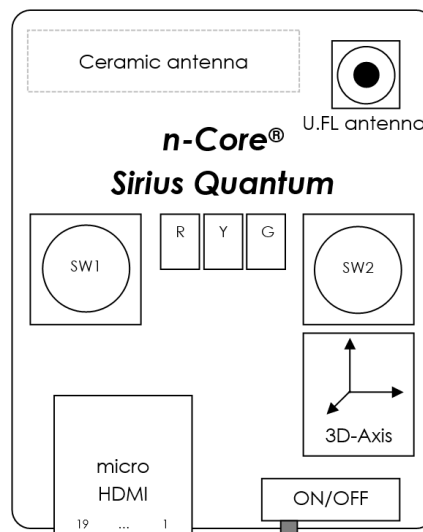
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## Technical Features

Electrical features	
Batteries Power Supply	3.7V
External Power Supply	3.2V - 5.5V
Power Switch	ON/OFF
Physical characteristics	
Dimensions (mm)	22 x 32.72 x 5
Micro-controller	
Model	ATMEGA128RFA1
Frequency	16MHz
Flash	128KB
RAM	16KB
EEPROM	4KB
Radio	
Transceiver	Integrated AT86RF231
Frequency Band	2405 to 2480MHz
Number of Channels	16
Channel Spacing	5MHz
Max. Power Transmission (Software-controlled)	-11 to +22dBm
Sensitivity	-100dBm
Data Transmission Rate	250Kbps
Connectivity	
<ul style="list-style-type: none"> <li>I<sup>2</sup>C Master (Pull-Up)</li> <li>ADC</li> <li>JTAG</li> <li>SPI</li> <li>GPIO (x2) TTL 0 - 3.5V</li> <li>UART</li> <li>Power Supply</li> </ul>	Via HDMI type D connector
Programming Port	JTAG (via HDMI type D connector)
Buttons (x2)	Connected to IRQs
LEDs (x3)	Red/Yellow/Green

## Reference Schematics



## Development Tools

n-Core offers a complete Application Programming Interface (accessible from different platforms like C/C++, .Net or Java, under Windows and Linux) to easily create end-user applications from any compatible Integrated Development Environment. n-Core also offers through this API **two powerful engines** that highly facilitates the development of specific applications:

- Locating engine.** It offers additional functionalities for developing **Real-Time Locating Systems**. Includes powerful algorithms that calculate the position of any n-Core device with an exceptional accuracy, both indoors and outdoors.
- Automation engine.** Control and monitoring of any sensor or actuator connected to the system. Consists of a set of dynamic link libraries (DLLs) with basic functions ranging from networking to automatic data collection.

## Contact Information



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