

# n-Core® Sirius IOn

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

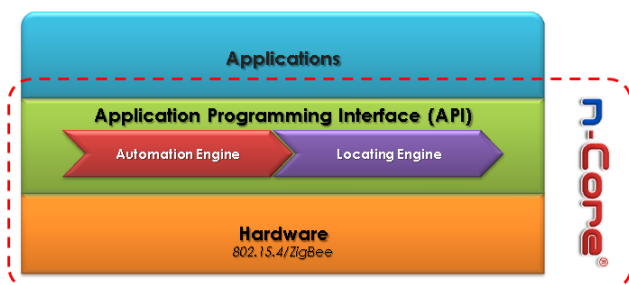
## Overview

The all-new **Sirius IOn** is a flexible expansion board that offers **full access to the I/O and programming interfaces** of the *n-Core Sirius Quantum* and *RadIOn* devices. The *Sirius IOn* is also compatible with the *n-Core Sirius B* and *D* devices.

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



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



## Main Features

- Small form factor.
- Compatible with the *n-Core Sirius B* and *D* devices.
- Three different flavors: **Development, Environment** and **Motion**.

	D	E	M
Sensors			
Accelerometer			✓
Digital Compass			✓
Luminosity		✓	
Humidity		✓	
Temperature		✓	
Proximity / Light			✓
Reed Relay	✓		
Connectors			
JTAG	✓		
I <sup>2</sup> C	✓	✓	✓
UART	✓		
ADC	✓		
Power	✓	✓	✓
HDMI (Only compatible with <i>Sirius Quantum</i> and <i>RadIOn</i> )	✓		
Serial Interfaces Connector (SIC)	✓	✓	✓
Common			
Power Supply Circuit	✓	✓	✓
Power Switch	✓	✓	✓
Reset Button	✓	✓	✓
Special features			
USB-UART	✓		
Battery Charge Circuit	✓		

## Benefits & Applications

The all-new **Sirius IOn** is a versatile 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 connectivity is a key factor. The *Sirius IOn* 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.

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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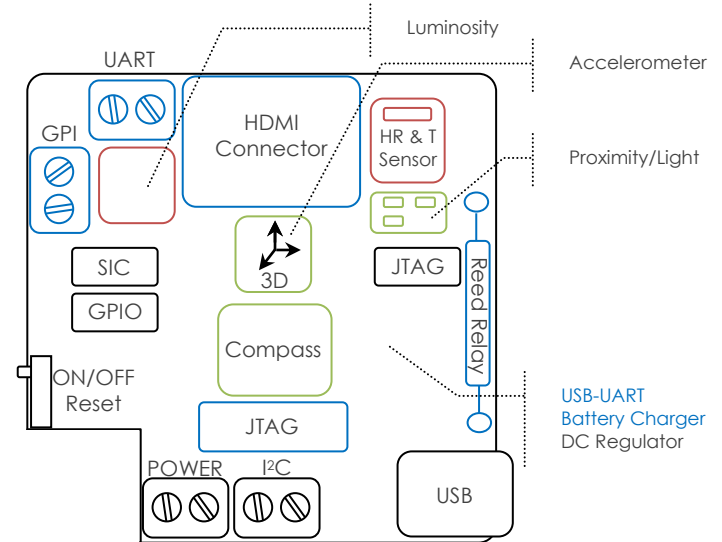
## Technical Features

n-Core Sirius IOn (Development)	
<b>Electrical features</b>	
External Power Supply	3.7V - 9V
Reset Button	-
Power Switch	ON/OFF
<b>Physical characteristics</b>	
Dimensions (mm)	41 x 42 x 15
<b>Connectivity</b>	
<ul style="list-style-type: none"> <li>I<sup>2</sup>C</li> <li>SPI *</li> <li>UART</li> <li>GPI</li> <li>Power Supply</li> </ul>	SIC / USB / Screw connector * SPI not available via screw connector
<ul style="list-style-type: none"> <li>JTAG</li> </ul>	HDMI type A / mini JTAG header / JTAG connector
<ul style="list-style-type: none"> <li>I<sup>2</sup>C</li> <li>SPI</li> <li>UART</li> <li>JTAG</li> <li>GPIO</li> <li>IRQ</li> <li>Device reset</li> <li>Power Supply</li> </ul>	HDMI type A
<ul style="list-style-type: none"> <li>USB – UART</li> </ul>	(CP2103) USB via SIC, HDMI or Screw connector
<ul style="list-style-type: none"> <li>Sensors:</li> </ul>	Reed Relay

n-Core Sirius IOn (Environment)	
<b>Electrical features</b>	
External Power Supply	3.7V - 9V
Reset Button	-
Power Switch	ON/OFF
<b>Physical characteristics</b>	
Dimensions (mm)	41 x 42 x 15
<b>Connectivity</b>	
<ul style="list-style-type: none"> <li>Power Supply</li> </ul>	SIC / USB / Screw connector
<ul style="list-style-type: none"> <li>Sensors</li> </ul>	Luminosity, Humidity and Temperature via SIC and I <sup>2</sup> C screw connectors

n-Core Sirius IOn (Motion)	
<b>Electrical features</b>	
External Power Supply	3.7V - 9V
Reset Button	-
Power Switch	ON/OFF
<b>Physical characteristics</b>	
Dimensions (mm)	41 x 42 x 15
<b>Connectivity</b>	
<ul style="list-style-type: none"> <li>Power Supply</li> </ul>	SIC / USB / Screw connector
<ul style="list-style-type: none"> <li>Sensors</li> </ul>	Accelerometer, Compass and Proximity via SIC and I <sup>2</sup> C screw connectors

## 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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