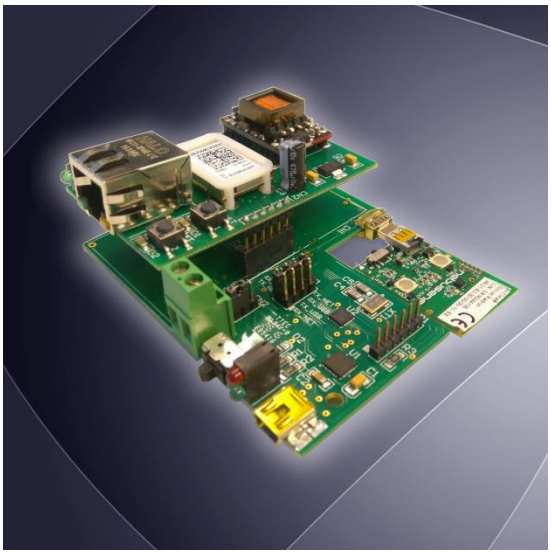
n-Core® Sirius Gateway

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

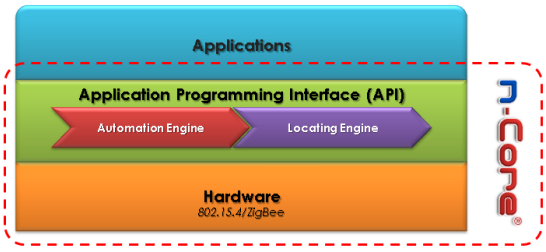
Overview

The n-Core ***Sirius Gateway*** 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.

This n-Core device **provides the capacity to extend easily the wireless networks based on the international standard IEEE 802.15.4/ZigBee™ through Internet**. The Sirius Gateway can be setup with one of its three interchangeable communication modules (GPRS, Wi-Fi and Ethernet PoE), allowing the user to choose the option that best suits its application.



The new *Sirius Gateway* 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.
- Software-selectable U.FL and ceramic antennas for the 802.15.4/ZigBee™ international standard module.
- Read range up to 500 meters.
- Sensitivity up to -100 dBm.
- Maximum output power up to +22 dBm.
- Fully compatible with the *n-Core Sirius* family.
- Three interchangeable different modules:
  - GPRS
  - Wi-Fi
  - Ethernet PoE
- On/Off switch
- Programming and updating interfaces:
  - JTAG and USB

Benefits & Applications

The all-new ***Sirius Gateway*** is a full-featured wireless device that facilitates the development of different types of customized 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 Gateway*** is ideal for use in a multiple variety of applications in combination of the rest of the n-Core Sirius devices, for example:

- Healthcare at hospitals or home retirements.
- In-home telecare.
- Safety of workers in industry.
- Location of guards and children in mall centers.
- Security and surveillance applications.
- Logistics and asset tracking.
- Access control systems.
- 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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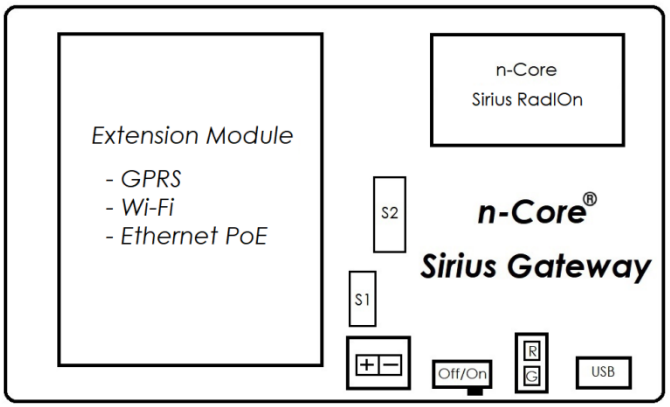
Technical Features

Electrical features	
External Power Supply	5 V
Power Switch	On / Off Switch
Physical characteristics	
Dimensions (mm) without enclosure	87 x 69 x 30
Dimensions (mm) with enclosure	112 x 75 x 45
Micro-controller	
Model	ATMEGA128RFA1
Frequency	16 MHz
Flash	128 kB
RAM	16 kB
EEPROM	4 kB
Radio	
Frequency Band	2405 to 2480 MHz
Number of Channels	16
Channel Spacing	5 MHz
Tx Output Power (Software-controlled)	-11 to +22 dBm
Rx Sensitivity	-100 dBm
Data Transmission Rate	250 kbps
Connectivity	
Extension Modules	• GPRS • Wi-Fi • Ethernet POE
Programming Port	• USB • JTAG
LEDs (x2)	• Red • Green
Selector Switch (x2)	• LAN/GSM • RX/TX Connection

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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