

Product Brief – JN5121-EK001, 2, 4

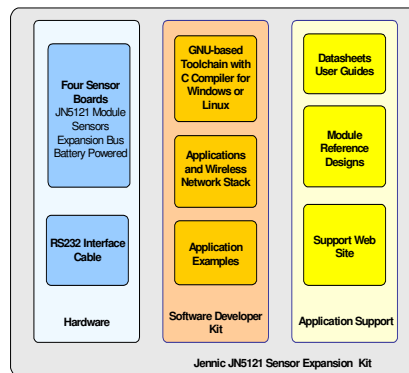
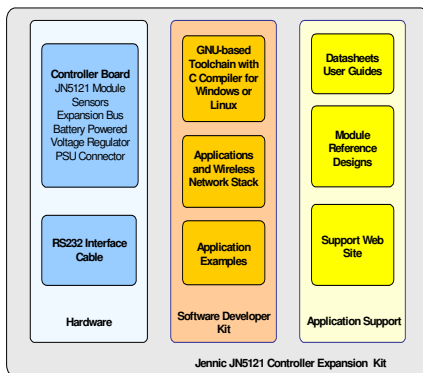
JN5121 Wireless Controller and Sensor Expansion Kits

Overview

Jennic's IEEE802.15.4 Controller and Sensor Expansion Kits are designed to complement our range of evaluation kits. They provide additional controller or sensor boards for the development of more complex wireless sensor networks based on the JN5121 wireless microcontroller.

The controller and sensor boards are identical to those found in the evaluation kits, enabling developers to rapidly develop and deploy larger networks. Each board features the JN5121 wireless microcontroller module combined with temperature, humidity and light-level sensors and an expansion port to allow for interfacing to user sensors and controls. A RS232 interface enables connection to a PC for flash programming and communications during debug and test. Additionally the controller board has a 128x64 pixel monochrome bitmapped LCD and on board voltage regulation to allow an external power supply unit to provide power.

Diagram



Features:

JN5121-EK002: Controller Expansion Kit

- Controller board (1 off)
- JN5121 module with SMA connector for user antenna
- 2.4GHz IEEE802.15.4 compliant
- Onboard temperature, light level and humidity sensors
- RS232 connection to PC
- JN5121 I/O expansion port
- 128x64 pixel bitmapped LCD
- On board voltage regulation, allows for an external PSU to provide power

JN5121-EK001: Sensor Expansion Kit, Ceramic Antenna

- Sensor boards (4 off)
- JN5121 module with integrated ceramic antenna
- 2.4GHz IEEE802.15.4 compliant
- Onboard temperature, light level and humidity sensors
- RS232 connection to PC
- JN5121 I/O expansion port

JN5121-EK004: Sensor Expansion Kit, SMA Connector

- Sensor boards (4 off)
- JN5121 module with SMA connector for user antenna
- 2.4GHz IEEE802.15.4 compliant
- Onboard temperature, light level and humidity sensors
- RS232 connection to PC
- JN5121 I/O expansion port

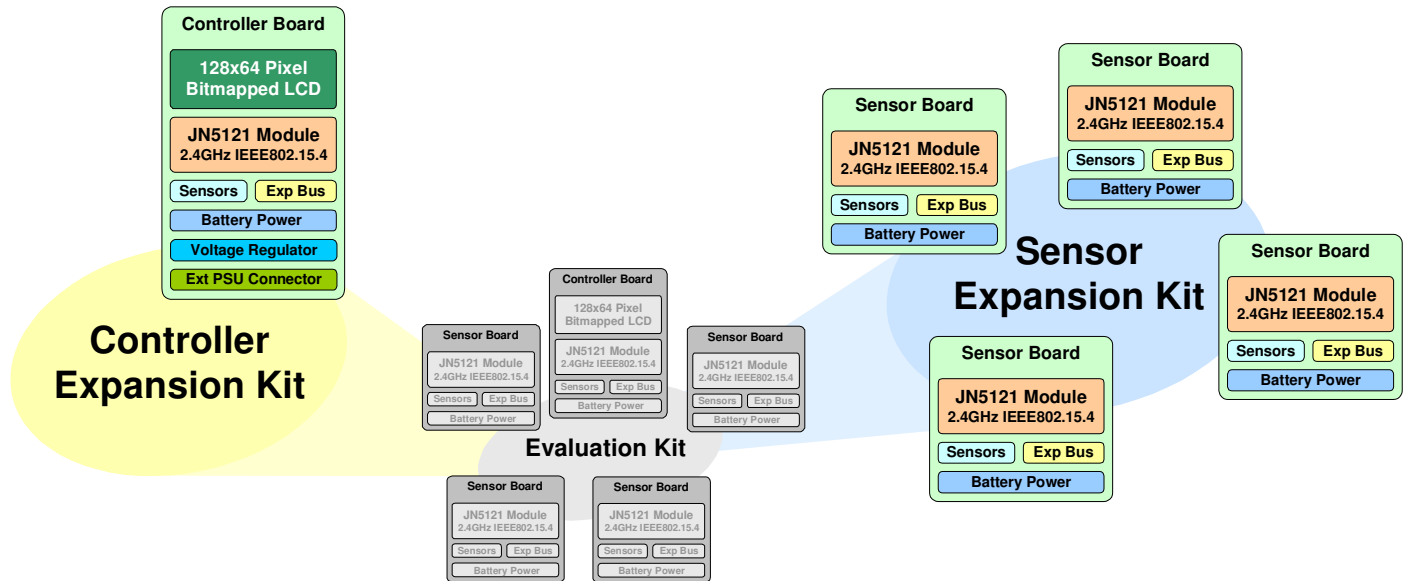
Benefits

- Low cost system to expand wireless sensor networks
- Consistent hardware architecture simplifies the system expansion process
- Ideal for application development and demonstration
- Power efficient microcontroller for application processing
- Based on JN5121 module architecture, provides low-risk route to manufacture

Applications

- Robust and secure low power wireless applications
- Wireless sensor networks, particularly IEEE802.15.4 / ZigBee systems
- Home and commercial building automation
- Home networks
- Toys and gaming peripherals
- Industrial systems
- Telemetry and utilities (e.g. AMR)

Network Expansion



Evaluation Kits

Jennic provides a range of evaluation kits to enable the user to quickly, easily and effectively develop applications for wireless sensor networks. A network starter kit (JN5121-EK003) with 3 sensor boards provides a low cost entry route, whilst a full evaluation kit (JN5121-EK000) allows development of applications using Mesh network stacks and includes a controller board, four sensor boards and an RS232 serial interface cable to connect to the PC-based development platform

A software development kit includes a complete suite of tools for rapid application development and debug, including C compiler, assembler, debugger and flash programmer. The tool chain is based upon the mature GNU tools and runs on either Linux or Windows platforms. A series of libraries provide developers with access to the peripheral functions of the JN5121 wireless microcontroller through a simple application programming interface. Applications developed on this kit can be directly loaded into the flash memory of the standard range of JN5121 modules and so production solutions may be implemented quickly, easily and with low-risk.

Wireless Protocol Stacks

An IEEE802.15.4 compliant protocol stack library is provided as standard, this is suitable for point-to-point, star and tree networks. Libraries are also available for mesh network stacks such as ZigBee and IPv6.

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