Product Brief – JenNet-IP-EK040

JenNet-IP Evaluation Kit

Overview

JenNet-IP is a wireless IPv6 based network solution driving the “Internet of Things”. Based on the well established IEEE 802.15.4 2.45GHz low power radio technology, it adds the self healing JenNet tree networking stack, the IETF 6LoWPAN IP layer and “JIP”, a powerful and flexible application layer enabling interoperability between devices. It is initially targeted at Lighting and Home Automation systems where it is rapidly becoming established as the system of choice, with provision for many different types of device, all connecting to the same wireless network. With this solution, every device in the home can have its own IPv6 address, turning the home into a simple extension of the internet and enabling new and exciting innovations to be created in home controls and energy management. The JenNet-IP-EK040 evaluation kit provides all the components needed to allow developers to create these new applications.

Hardware Architecture

Benefits

- Complete SDK and JenNet-IP network stack
- IP connectivity to all wireless nodes
- Robust self-healing JenNet-IP stack for quick and easy development
- Unrestricted development environment – no license fee
- Rapid application development and demonstration

Applications

- Domestic Lighting control
- Home Automation: heating and ventilation control, energy management, access control, blind and window control
- Building Automation: HVAC, access control, security, fire detection and alarm
- Commercial and Outdoor lighting
- Security Systems

Wireless sensor nodes (4 off)

- JN5148-J01 module
  - 2 x uFl connected to SMA external antenna
- JN5142-J01 module
  - 1 x PCB antenna
  - 1 x uFl connected to SMA external antenna
- USB micro-B connectors
- USB, battery or external PSU (not included)
- 2 x USB cables

Plug-in “Shields” (4 off)

- Arduino compatible footprint
- 3 dimmable bright white LED
- Temperature, light level and humidity sensors
- JN514x IO expansion port

High power modules (2 off)

- JN5148-J01 high power module for extended range

USB Dongles (2 off)

- High power USB dongles for sniffer and coordinator

Router

- Router providing connection to Ethernet
- Custom Open WRT software
- Power supply

Remote Control

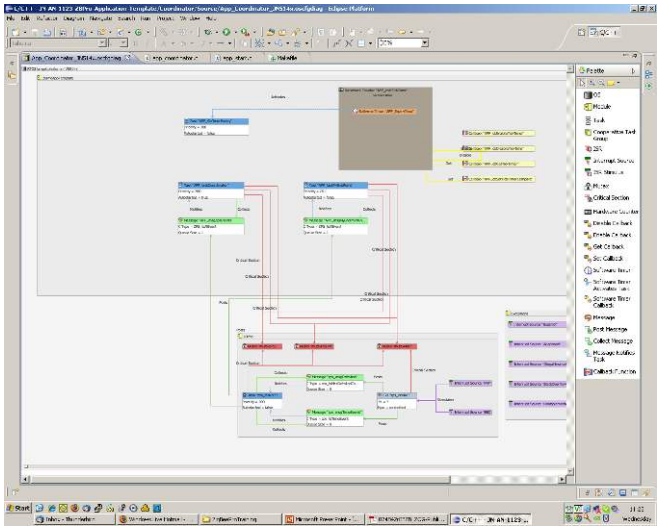
- Capacitive touch remote control

Software development kit

- GNU-based toolchain - C compiler
- Flash programmer
- Eclipse IDE
- GNU Debugger (GDB) integrated in Eclipse
- Microcontroller and peripheral libraries
- JenNet-IP library

Software Development

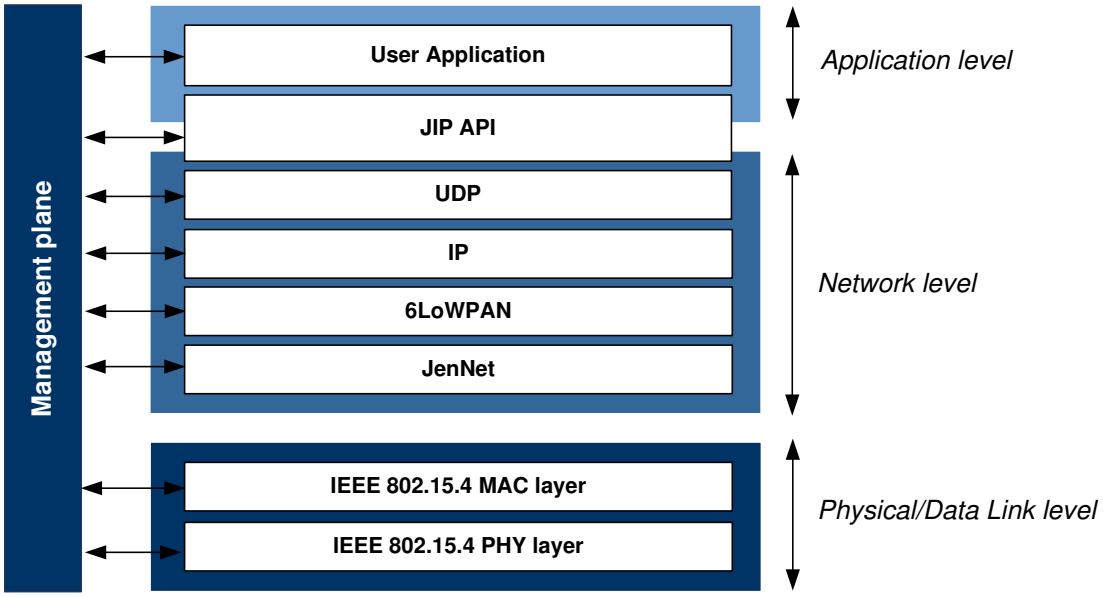
The SDK includes a complete toolchain for rapid application development and debug, including C compiler, assembler, GNU Debugger (GDB) and flash programmer. The toolchain is based upon the industry standard GNU tools running on Windows platforms. The industry standard Eclipse IDE integrates the tool chain, the RTOS and the stack configuration tool into a development environment that offers maximum customisation and collaboration between groups of developers.



Out of the box, the evaluation kit runs a lighting demo which enables the LED lamps to be switched and dimmed from the remote control and also from a web interface on the router or through JIP applications on smartphones or tablets.

An overlay to the Open WRT Linux distribution is provided, allowing the development of custom interfaces to JenNet-IP networks.

JenNet-IP Stack Layers



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