

North Pole Engineering, Inc.

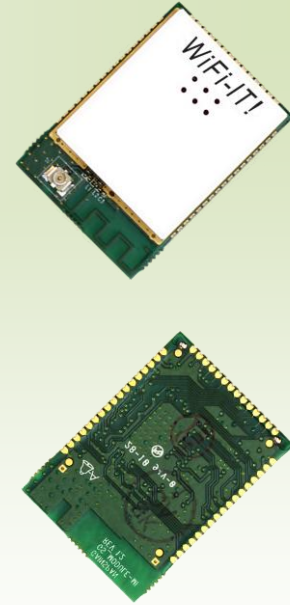
NPE WiFi-IT! Embedded 802.11 Wireless Solution

Product Overview

The WiFi-IT! family of fully certified modules offers a quick, easy and cost effective way for device manufacturers to add Wi-Fi capabilities to their products. The module operates in hosted or standalone modes. To operate in hosted mode the module is connected to any embedded design, utilizing a standalone 8/16/32-bit microcontroller, through a serial interface (UART/SPI). The embedded microcontroller uses a simple command set to communicate and control the WiFi-IT! module. The module runs the TCP/IP and wireless networking stacks, freeing the embedded microcontroller of the overhead of managing network communication details.

The real power of the WiFi-IT! becomes apparent when operating in standalone mode. The module provides multiple hardware interfaces including, UART, SPI, I2C, PWM, GPIO and ADC and an onboard application processor, fully programmable in WiFi-Basic. Standalone operation allows the module to perform all of the processing in many applications.

WiFi-IT! modules are an ideal solution for organizations with limited or no Wi-Fi or RF expertise, as it not only dramatically reduces RF design time but also removes the burden of testing and certification, allowing customers to focus on their core application, product or expertise.



Features

- + Full 802.11/b 11 Mbps data transfer rate
- + Operates with standard 802.11 b/g/n Access Points
- + FCC/IC, Wi-Fi Certified Modules
- + Infrastructure or Adhoc modes supported
- + Industry standard interfaces – 2 UART, 2 SPI, I2C, PWM, 2 ADC, GPIO
- + Real-Time Clock for wakeup and time stamps
- + Supports 802.11 security protocols – WEP, WPA/WPA2-PSK
- + Single 3.3V power source
- + Ultra-low power consumption through dynamic power management – perfect for battery operation.
- + Industrial temperature range.

WiFi-Basic

Wi-Fi in hours not weeks!

WiFi-Basic is a high-level language developed from the BASIC family of languages with added support for networking and control of hardware interfaces. WiFi-Basic provides a sophisticated and flexible yet easy to use high-level language that supports rapid application development. Using WiFi-Basic together with the WiFi-IT! module eliminates the need for an external processor for most automation and control applications. WiFi Basic provides you with the tools needed to get your WiFi enabled device to market quickly while still being able to maintain and adapt your application for the future.

Use WiFi-Basic to write your application and remove the cost of an external microcontroller!

WiFi-Basic Features

- + Structured language with clean simple syntax
- + Fully supports network and wireless capabilities of the WiFi-IT! modules
- + Fully supports all device I/O – UART, SPI, I2C, PWM, ADC and GPIO
- + Fast compilations
- + Integrated Development Environment (IDE)
 - Syntax highlighting Editor
 - WiFi-Basic Compiler
 - Wireless/Wired Debugger
 - Project Configuration Panel generates initialization code
- + IDE promotes iterative development cycle for rapid code development

WiFi-Basic Development

Developing in WiFi-Basic is fast and easy! The WiFi-Basic compiler abstracts the low-level network and wireless operation into simple high-level functions, while still retaining the simplicity of the Basic language syntax. This allows you to concentrate on the job of developing your application without requiring that you understand all of the intricacies of Internet Protocol (IP) and Wi-Fi functionality.

The WiFi-Basic toolset includes a syntax highlighting editor, structured Basic language compiler, wired or wireless debugger, wireless application testing toolset and a project configuration panel that generates your initialization code automatically. The entire toolset is collected into an Integrated Development Environment (IDE), based on the Eclipse® framework, and promotes an iterative development cycle through quick compilations, wireless downloads and built-in wireless application test tools.

All of the WiFi-IT! Development tools have been gathered together into an Evaluation and Development Kit (EDK), which can be ordered directly from www.npe-inc.com. The WiFi-IT! EDK gives you everything you need to get started developing Wi-Fi applications. The EDK includes, a base board with LED signal monitoring, two modules, the WiFi-Basic IDE, a pre-configured access point and access to our online 4-Hour Response Support Forum.

North Pole Engineering, Inc.

221 N. 1st St.
 Suite 310
 Minneapolis, MN. 55401
 612-305-0440

Ordering Information

The WiFi-IT! family of modules is available in four different configurations of antenna options and power output. All modules are pin compatible with castellated edge connectors for soldering directly to an application base-board.

| Part No. | Options | |
|----------|-----------------|-------------------------------|
| | Power Amplifier | Antenna Option |
| WL11-IP | Internal PA | PCB Antenna |
| WL11-IE | Internal PA | External Antenna (μ .FL) |
| WL11-EP | External PA | PCB Antenna |
| WL11-EE | External PA | External Antenna (μ .FL) |

WL11 Module Specifications

| | |
|-------------------------------|------------------------------------------------------------------------------|
| Radio Protocol | IEEE 802.11 b/g/n compatible |
| RF Output (Typical) | 9 dBm Internal Power Amplifier 19 dBm External Power Amplifier |
| RF Frequency | 2.4 to 2.497 GHz |
| Supported Data Rates | 11, 5.5, 2, 1 Mbps (802.11 b) |
| Networking Protocols | UDP, TCP/IP (IPv4), DHCP, ARP, DNS, HTTP/HTTPS Client and Server |
| Security Protocols | WEP, WPA/WPA2-PSK, Enterprise, EAP-FAST, EAP-TLS, EAP-TTLS, PEAP |
| Antenna Options | PCB and μ .FL connector |
| I/O Interfaces | |
| Certifications and Compliance | FCC, IC, Wi-Fi, Japan, ETSI, RoHS |
| Power Source | 3.3 VDC |
| Power Consumption | Standby = < 5 μ A Receive = 164 mA Transmit (internal PA) = 192 mA |
| Dimensions | Internal PA = 1.28 x 0.9 inches External PA = 1.45 x 0.9 inches |

Evaluation and Development Kit

| Part No. | Description |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EDK | Standard Edition includes hardware development circuit board, two (2) modules, code-limited compiler, 3 months online support, preconfigured access point. |
| EDK+ | Professional Edition includes hardware development board, two (2) modules, full compiler, extended command set, 6 months online support, preconfigured access point. |

Find us on the Web:
www.npe-inc.com

