OVERVIEW

The PAN9420 Feature Pack is a software enhanced version of the already existing 2.4 GHz 802.11 b/g/n embedded Wi-Fi module with integrated stack. The API minimizes firmware development and includes a full security suite.

The module combines a high-performance CPU, high-sensitivity wireless radio, baseband processor, medium access controller, encryption unit, boot ROM with patching capability, internal SRAM, and in-system programmable flash memory. The module’s integrated memory is available to the application for storing web content such as HTML pages or image data.

Parallel support of access point and infrastructure mode allows easy setup of simultaneous Wi-Fi connections from the module to smart devices and home network routers. The pre-programmed Wi-Fi SoC firmware enables client (STA), micro access point (µAP), and Wi-Fi Direct applications. With the transparent mode, raw data can be sent from the UART to the air interface to smart devices, web servers, or PC applications.

The UART/SPI communication is enhanced by a binary protocol. This increases efficiency and allows AES encryption.

FEATURES

- Fully embedded: integrated full-featured network stack
- Contains all necessary IoT functionality (Place & Play)
- Integrated, easy to use Cloud connection features:
  - Websocket, Arrow Connect API, MQTT Client (e.g. for IBM Watson and Microsoft Azure)
- Communication to Host: 2 UARTs/ single UART mode, SPI for higher speed
- Integrated webserver with AJAX/JSON for web applications
- No stack or WI-FI software implementation needed on a host MCU
- Simultaneous support of Access-Point & Infrastructure mode
- Fully automatical IP configuration, DHCP, mDNS
- Access by names (http://yourdevice)
- Integrated TCP/IP network stack: IPv4 and IPv6, UDP, and AutoIP
- Supports TLS 1.2/SSL, https, and Wi-Fi security (WPA2) for secure data connection
- Firmware update Over-the-Air and new feature for Cloud update
- Integrated QSPI flash memory for customer web contents, TLS certificates and configuration file
- Evaluation kit with pre-installed web application for quick prototyping available
- Evaluation and development tool WiFigurator for Windows
- Getting started tutorials, PC tool, quickstart guide
[CHARACTERISTICS]

- Surface Mount Type (SMT) 29.0 mm x 13.5 mm x 2.66 mm
- Marvell® 88MW300 MCU/WLAN System-on-Chip (SoC) inside
- Tx power up to +16 dBm @ IEEE 802.11b
- Rx sensitivity of -97 dBm @ IEEE 802.11b DSSS 1 Mbps
- 20 MHz channels up to 72 Mbps
- Power supply 3.0 to 3.6 V
- Current consumption 150 mA (mix mode Tx/Rx@11b, 11 Mbps), 75 mA Rx, 310 mA Tx peak
- Power down mode < 1 mA power consumption
- Low power mode available
- Temperature range of -40 °C to +85 °C

[BACKWARDS COMPATIBILITY PAN9420 FEATURE PACK]

- No hardware change on PAN9420
- The binary protocol is mandatory to be implemented for communication with the module
- Existing legacy PAN9420 software version will remain available