

# PAN9310/9320 Series

## Embedded Wi-Fi, Place-and-Play Modules

Wi-Fi Made Easy! Quickly add Wi-Fi to your application with Panasonic's **PAN9310/9320 Series**

Panasonic introduces a fully embedded Wi-Fi module with an integrated stack and API that minimizes firmware development and includes a full security suite. The **PAN9310/9320 Series** is a standalone 2.4GHz WiFi module, supporting the IEEE 802.11 b/g/n standards designed for applications where a small form factor and high throughput data rates are required. The module is a cost-effective, power-efficient solution for WLAN applications. The **PAN9310/9320 Series** combines a high-performance CPU, high-sensitivity (-98dBm) 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 to store web content such as html pages or image data.

Coincident support of access point and infrastructure modes enable easy setup up allowing Wi-Fi connections from the **PAN9310/9320 Series** to smart devices and home network routers, simultaneously. WLAN SoC firmware enables client (STA), micro access point (uAP) and Ad-hoc mode (Wi-Fi direct) applications. Transparent mode permits data to be sent from the **PAN9310/9320 Series** UART unmodified to the air interface to smart devices, web servers or pc applications.

The **PAN9310/9320 Series** is qualified to the IEEE 802.11 b/g/n standards. All Panasonic Wi-Fi RF modules carry FCC, IC and CE certifications. Panasonic calibrates and tests every module eliminating a time consuming application production process and cost. Panasonic cost engineering lowers component count and the application BOM. With a fully shielded case, integrated crystal oscillators and chip antenna contained in a footprint of just 29 x 13.5 x 2.66 mm<sup>3</sup>.

Panasonic's designer friendly **EVAL\_PAN9320EMK** Experimenter Kit reduces design efforts and critical time to market. Product design cycles are greatly reduced using Panasonic's free of charge reference design and design review services<sup>1</sup>. Software available from Marvell® contains applications, demonstrations and utilities that execute on the **PAN9310/9320 Series**.

Create detailed session log-files with Panasonic's exclusive Windows based **WiFigurator**. Read and write important values such as: Firmware Version, WiFi Driver Version, SSID, IP Address and Security Parameters.

### Features

- Surface Mount Type 29.0 x 13.5 x 2.66 mm<sup>3</sup>
- Fully Embedded Wi-Fi module with integrated MCU, Radio, Wi-Fi stack, antenna and crystals
- Supports IEEE 802.11 b/g/n, security standards WEP, WPA, WPA2, WPA2 PSK
- Tx Power up to +18 dBm (IEEE 802.11b CCK) and 14dBm (IEEE 802.11g ODFM)
- High Rx Sensitivity -98 dBm (IEEE 802.11b DSSS 1Mbps)
- Telnet, HTTP, AJAX and JSON Interfaces
- Simultaneous Access point and Infrastructure modes

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<sup>1</sup> Qualified projects only

- Supports TLS/SSL, https and Wi-Fi security (WPA2) for Secure Data Connections
- Plug-n-Play Name Services (DHCP, DNS) and Custom Name Access (<http://yourdevice>)
- Wireless Update of Radio Driver and MCU Firmware with Integrated Boot loader
- Marvell® 88W8782 WAN System-on-Chip (SoC) and 88MC200 (MCU) Inside
- Integrated, Extendable 1.5MB Flash for Web Content and Configuration File
- Easy to use Evaluation Board for Quick Development and Reduced time to Market
- Use of Web Technologies (HTML, JavaScript), no need for Wi-Fi Stack implementation
- Ready to use internet access (integrated Email Server and Cloud Communication Client)
- Getting started Tutorials, Libraries, and APIs
- Evaluation and Development software Wifigurator for Windows

### Embedded Wireless Applications

- Imaging Platform
- Gaming Platform
- Consumer Electronic
- Portable Application
- Health & Fitness
- Smart Energy
- Asset Monitoring Tracking
- Location Applications
- Industrial Controls
- Commercial Monitoring
- Medical devices
- Thermostat, Control panels

## Technical Parameters

Parameter	Value	Condition/Note
Software		Full Embedded
Rx Sensitivity	-98 dBm	@ 1M-DSSS (See Datasheet for Details)
Tx Power	+18 dBm	@ 11b
Power Supply	3.0 to 3.6 V	
Current Consumption	430 mA, 160 mA	Tx, Rx max @11b
Centre Frequency	2.4 GHz	802.11 b/g/n
Operating Temperature Range	-30 to 70C	
Size	29.0 x 13.5 x 2.66	mm

## Ordering Information

Part Number	Description
ENW-49A01A3EF	PAN9320 Series, Embedded Wi-Fi Module, VIPAR Stack., -30-70°C, Chip Antenna
ENW-49A01C3EF	PAN9310 Series, Embedded Wi-Fi 33 Module, VIPAR Stack., -30-70°C, 50 Ohm Pad
EVAL_PAN9320EMK	PAN9320 Experimenter Kit, Motherboard and Daughter Board
EVAL_PAN9320ETU	PAN9320 Daughter Board

# Block Diagram

