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 PAN9320 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 secure data connections 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.

Features
• Surface mount type 29.0 x 13.5 x 2.66 mm³
• Fully embedded WiFi module with integrated MCU, radio, WiFi stack, antenna and crystals
• IEEE 802.11 b/g/n, security standards WEP, WPA, WPA2, WPA2 PSK
• Simultaneous access point and infrastructure modes
• Supports TLS/SSL, https and WiFi security (WPA2) for secure data connections
• Tx Power up to +18dBm (IEEE 802.11b CCK) and 14dBm (IEEE 802.11g OFDM)
• High Rx sensitivity -98dBm (IEEE 802.11b DSSS 1Mbps)
• Telnet, http, Ajax and Jason interfaces
• Plug-n-Play name services (DHCP, DNS) and custom name access (http://yourdevice)
• Wireless update of radio driver and MCU firmware with integrated bootloader
• Marvell® 88W8782 WLAN 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 WiFi stack implementation
• Ready to use internet access (integrated email server and cloud communication client)
• Getting started tutorials, libraries, APIs
• Evaluation and development software Wifigurator for Windows

Embedded Wireless Applications
• Imaging platforms
• Gaming platforms
• Consumer electronics
• Portable applications
• Health and fitness
• Smart energy
• Asset monitoring tracking
• Location applications
• Industrial controls
• Commercial monitoring
• Medical devices
• Thermostat, control panels
Panasonic

**PAN 9320**

- VCC 3.3V
- Resetn/PDn
- WaLe Up0/1
- JTAG
- UART0 (Command)
- UART1 (Data)
- Q-SPI (Ext Flash)
- I2C (Sensors)
- USB (CDC Device)
- SDIO (Testing)
- MCU Ready
- WPS
- Factory Reset
- SDIO (Testing)

**Microcontroller Unit**
- AHB Bus
- Debug
- DMA
- JTAG
- SWD
- MPU
- Memory
- RDM
- System Unit
- Timer
- WDT
- ADC/DAC
- T-Sensor
- ACOMP

**WLAN-SoC**
- Power Management
- CPU
- JTAG
- UART
- GPIO
- OTP
- SDIO
- SDID Controller
- CPU1/F
- Encryption
- ROM
- SRAM
- Direct Conversion
- 802.11 MAC
- Baseband
- LDO I/F
- 2.4G
- TX/RX
- LPF

**DC/DC Step-down Converter**

- Ceramic Chip Antenna

**TECHNICAL PARAMETERS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Condition/Note</th>
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</thead>
<tbody>
<tr>
<td>Software</td>
<td>Full Embedded</td>
<td></td>
</tr>
<tr>
<td>Rx Sensitivity</td>
<td>-98dBm @ 1M-DSSS</td>
<td>@ 1M-DSSS (See datasheet for details)</td>
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<tr>
<td>Tx Power</td>
<td>+18dBm @ 11b</td>
<td>@ 11b</td>
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<tr>
<td>Power Supply</td>
<td>3.0 to 3.6V</td>
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<tr>
<td>Current Consumption</td>
<td>100mA, 160mA</td>
<td>@ 11b</td>
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<tr>
<td>Centre Frequency</td>
<td>2.4GHz</td>
<td></td>
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<tr>
<td>Temperature</td>
<td>-30°C to +70°C</td>
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<tr>
<td>Size</td>
<td>29.0 x 13.5 x 2.66 mm</td>
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**ORDERING INFORMATION**

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<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>ENW-49001A1MF</td>
<td>PAN9320 Series, Embedded Wi-Fi Module, VIPAR Stack, -30°C to 70°C, Chip Antenna</td>
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<tr>
<td>ENW-49001C1EF</td>
<td>PAN9320 Series, Embedded Wi-Fi Module, VIPAR Stack, -30°C to 70°C, 3652 Pad</td>
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<tr>
<td>EVAL_PAN9320EMK</td>
<td>PAN9320 Experiment Kit, Motherboard and Daughter Board</td>
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<tr>
<td>EVAL_PAN9320ETU</td>
<td>PAN9320 Daughter Board</td>
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