### Wi-Fi Module Selector Guide

**GOT QUESTIONS?** Call Technical Support 1 (877) 466-9722


**ULTRA LOW POWER EMBEDDED Wi-Fi MODULES, SENSORS, INTERFACE ADAPTERS, AND Wi-Fi CUSTOM SOLUTIONS**

#### Part Number

<table>
<thead>
<tr>
<th>Description</th>
<th>RN-131G</th>
<th>RN-134</th>
<th>RN-121</th>
<th>RN-171</th>
<th>RN-174</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wi-Fi Protocol</td>
<td>802.11b/g</td>
<td>802.11b/g</td>
<td>802.11b/g</td>
<td>802.11b/g</td>
<td>802.11b/g</td>
</tr>
<tr>
<td>Output Power</td>
<td>18 dBm</td>
<td>18 dBm</td>
<td>18 dBm</td>
<td>0 dBm to 12 dBm*</td>
<td>0 dBm to 12 dBm*</td>
</tr>
<tr>
<td>Max Throughput</td>
<td>1 Mbps</td>
<td>1 Mbps</td>
<td>2 Mbps</td>
<td>3 Mbps</td>
<td>3 Mbps</td>
</tr>
<tr>
<td>Size (mm)</td>
<td>20 x 38 x 4</td>
<td>26 x 51 x 8</td>
<td>29 x 49 x 6</td>
<td>28 x 49.5 x 6</td>
<td></td>
</tr>
<tr>
<td>Temp Range</td>
<td>-40° to 85°C</td>
<td>-40° to 85°C</td>
<td>-40° to 85°C</td>
<td>-40° to 85°C</td>
<td>-40° to 85°C</td>
</tr>
<tr>
<td>Package Type</td>
<td>Surface mount</td>
<td>Through-hole</td>
<td>Through-hole</td>
<td>Surface mount</td>
<td>Through-hole</td>
</tr>
<tr>
<td>Antenna Options</td>
<td>U.FL connector, chip antenna</td>
<td>U.FL connector, chip antenna</td>
<td>Chip antenna, PCB trace, wire antenna, U.FL connector</td>
<td>Chip antenna, PCB trace, wire antenna, U.FL connector</td>
<td></td>
</tr>
<tr>
<td>I/O</td>
<td>10xGPIO, 8 sensor inputs</td>
<td>10xGPIO, 8 sensor inputs</td>
<td>10xGPIO, 8 sensor inputs</td>
<td>10xGPIO, 8 sensor inputs</td>
<td></td>
</tr>
<tr>
<td>Host Processor Reqs</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Certifications</td>
<td>FCC, CE, IC, EN</td>
<td>FCC, CE, IC, EN</td>
<td>FCC, CE, IC, EN</td>
<td>FCC, CE, IC, EN</td>
<td></td>
</tr>
<tr>
<td>Current Consumption</td>
<td>&lt;20mA @ low throughputs eg., 1Mbps</td>
<td>&lt;25mA @ low throughputs eg., 1Mbps</td>
<td>&lt;4uA (Sleep), 2mA (standby-associated, connected to access point), 20mA @ low throughputs eg., 1Mbps</td>
<td>&lt;1mA (shutdown), &lt;2mA (standby-associated, connected to access point), &lt;20mA @ low throughputs eg., 1Mbps</td>
<td>&lt;1mA (shutdown), &lt;2mA (standby-associated, connected to access point), &lt;20mA @ low throughputs eg., 1Mbps</td>
</tr>
</tbody>
</table>

#### Wi-Fi (802.11n) CHIPSETS, MODULES, AND DEVELOPMENT KITS

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Ultra low power 802.11b/g module</td>
<td>Ultra low power dualband 802.11a/b/g/n module</td>
<td>Ultra low power 802.11b/g Serial-to-Wi-Fi module with integrated Wi-Fi stack, Wi-Fi stack and integrated antenna</td>
<td>Ultra low power 802.11b/g Serial-to-Wi-Fi module with integrated TCP/IP stack and Wi-Fi stack</td>
<td>802.11a/b/g Serial-to-Wi-Fi module with integrated TCP/IP stack and Wi-Fi stack</td>
<td>802.11a/b/g Serial-to-Wi-Fi module with integrated TCP/IP stack and Wi-Fi stack</td>
</tr>
<tr>
<td>Wi-Fi Protocol</td>
<td>802.11b/g/n</td>
<td>802.11a/b/g/n</td>
<td>802.11b/g</td>
<td>802.11b/g</td>
<td>802.11b/g</td>
<td>802.11b/g</td>
</tr>
<tr>
<td>Output Power</td>
<td>18dBm</td>
<td>18dBm</td>
<td>18dBm</td>
<td>18dBm</td>
<td>18dBm</td>
<td>18dBm</td>
</tr>
<tr>
<td>Receive Sensitivity</td>
<td>-97dBm@1Mbps, -75dBm@54Mbps</td>
<td>-97dBm@1Mbps, -75dBm@54Mbps</td>
<td>-97dBm@1Mbps, -75dBm@54Mbps</td>
<td>-97dBm@1Mbps, -75dBm@54Mbps</td>
<td>-97dBm@1Mbps, -75dBm@54Mbps</td>
<td>-97dBm@1Mbps, -75dBm@54Mbps</td>
</tr>
<tr>
<td>Max Throughput</td>
<td>SDIO: 35 Mbps</td>
<td>SDIO: 35 Mbps</td>
<td>UART: 2Mbps</td>
<td>UART: 2Mbps</td>
<td>UART: 2Mbps</td>
<td>UART: 2Mbps</td>
</tr>
<tr>
<td>Size (mm)</td>
<td>12.9 x 13.7</td>
<td>17.5 x 20</td>
<td>12.9 x 13.7</td>
<td>12.9 x 13.7</td>
<td>20 x 17.5</td>
<td>20 x 17.5</td>
</tr>
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<td>Temp Range</td>
<td>-40° to 85°C</td>
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<td>Package Type</td>
<td>Surface mount</td>
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<td>Surface mount</td>
<td>Surface mount</td>
</tr>
<tr>
<td>Antenna Options</td>
<td>None</td>
<td>None</td>
<td>Chip antenna or U.FL connector</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Hardware Interfaces</td>
<td>SDIO, SPI</td>
<td>SDIO, SPI</td>
<td>UART, SPI</td>
<td>UART, SPI</td>
<td>UART, SPI</td>
<td>UART, SPI</td>
</tr>
<tr>
<td>I/O</td>
<td>GPIO, Bluetooth coexistence</td>
<td>GPIO, Bluetooth coexistence</td>
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<td>GPIO, Bluetooth coexistence</td>
</tr>
<tr>
<td>Host Processor Reqs</td>
<td>TCP/IP, WLAN Supplicant</td>
<td>TCP/IP, WLAN Supplicant</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Current Consumption</td>
<td>&lt;1uA (shutdown) &lt;1.1mA (standby-associated, connected to access point) &lt;20mA @ low throughputs 1Mbps</td>
<td>&lt;1uA (shutdown) &lt;1.1mA (standby-associated, connected to access point) &lt;20mA @ low throughputs 1Mbps</td>
<td>&lt;1uA (shutdown) &lt;2mA (standby-associated, connected to access point) &lt;20mA @ low throughputs eg., 1Mbps</td>
<td>&lt;1uA (shutdown) &lt;2mA (standby-associated, connected to access point) &lt;20mA @ low throughputs eg., 1Mbps</td>
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</tr>
<tr>
<td>Wi-Fi Security</td>
<td>WEP, WPA, WPA2, WPA2-Enterprise, WPS, WMIM, WMIM-PS</td>
<td>WEP, WPA, WPA2, WPA2-Enterprise, WPS, WMIM, WMIM-PS</td>
<td>WEP, WPA, WPA2, WPS</td>
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*Confgurable via software

**REDING SIGNALS**
Wi-Fi Module Selector Guide

Wi-Fi Module Selector Guide

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Current Consumption

I/O

Output Power

Max Throughput

Size (mm)

Temp Range

Package Type

Hardware Interfaces

Host Processor Req

Certifications

Network Protocols Supported

Evaluation Kit

Part Number

Description

Wi-Fi Protocol

Output Power

Max Throughput

Size (mm)

Temp Range

Package Type

Hardware Interfaces

I/O

Host Processor Req

Certifications

Current Consumption

Wi-Fi Security

Network Protocols Supported

Evaluation Kit

PremierWave™ EN | 802.11n Wireless Embedded Device Server

PremierWave is a complete 802.11 a/b/g/n dual band radio, integrated solution with:
• ARM9 Core 32-bit processor (440 MIPS at 400MHz)
• Plenty of extra memory on board for application development:
  • Up to 64 MB SDRAM and 256 MB NAND Flash (Default 64 MB each)
  • Up to 16 MB serial SPI Flash (Default 8 MB)
• Variety of serial interface options: 2 UARTs (921Kbps), I2C, high speed SPI (Master/Slave), USB 2.0 full speed (host and device, 12Mb)
• Antenna diversity: on-board chip antenna with connectors for external antenna option*
• Linux OS

*The PremierWave EN module has been certified using the Taoglas external antenna listed below in addition to the internal antenna provided on the module.

Taoglas GW.71.S153
• Swivel type antenna
• RP-SMA(M) connector
• 2.4GHz/5.1~5.9GHz 5dBi peak gain

EMBEDDED DEVICE SERVERS

FEATURED PRODUCT

PremierWave

EAD/Rhea

Multiple antennas
• 2.4GHz & 5GHz
• 2 UARTs
• 2.0 full speed (host and device, 12Mb)
• Linux OS

PCB

Flexible Polymer PCB

Taoglas/FXP830

Wearable中小型
• Dual-band: 2.4GHz & 5GHz
• Gain: 2.6dBi
• Eff: 76%
• Dimensions (mm): 42 x 7 x 1.2

Terminal

Taoglas/GW.71

Heavy duty TPE housing
• Dual-band: 2.4GHz & 5GHz
• Durable TPE housing
• Gain: 5dBi
• Dimensions (mm): 197 x 10

Screw Mount

Taoglas/WS.01

Heavy duty Waterproof IP69K
• Dual-band: 2.4GHz & 5GHz
• 1/4 wave
• Gain 0 dBi
• Dimensions (mm): 31 x 31 x 0.1

Blade

EAD/ BT-Blade
• Dual-band: 2.4GHz & 5GHz
• Heavy duty Waterproof IP69K
• Return loss: <-11dB
• Dimensions (mm): 72 x 19 x 7

Wi-Fi ANTENNA GUIDE

Vendor/PN

Features

Dimensions (mm)

Image

Antenova/Indica

2.4 GHz ultra small
• Gain: 1.5dBi
• Eff: 70%
• Dimensions (mm): 3.3 x 1.6 x 0.6

Antenova/Mixtus

Dual-band:
• 2.4GHz
• Gain: 1.8dBi
• Eff: 79%
• Dimensions (mm): 10 x 10 x 0.9

Taoglas/SWLP.12

2.4 GHz ceramic patch for industrial applications
• Gain: 2dBi
• Eff: 80%
• Dimensions (mm): 12 x 12 x 4

Taoglas/FXP810

Dual-band:
• 2.4GHz
• Gain: 2.4dBi
• Eff: 76%
• Dimensions (mm): 31 x 31 x 0.1

Taoglas/FXP830

Dual-band:
• 2.4GHz
• Gain: 2.6dBi
• Eff: 84%
• Dimensions (mm): 42 x 7 x 1.1

Taoglas/SWR.01

Heavy duty Waterproof IP69K
• Dual-band: 2.4GHz & 5GHz
• Gain 0 dBi
• Dimensions (mm): 31 x 31 x 0.1

Taoglas/BT-Compact

2.4 GHz 1/4 wave
• Gain: 0 dBi
• Dimensions (mm): 27 x 7.5

Taoglas/WG.71

Dual-band:
• 2.4GHz & 5GHz
• Durable TPE housing
• Gain: 5dBi
• Dimensions (mm): 197 x 10