



WGM160P Wi-Fi® Module

A fully certified module for all your IoT Wi-Fi needs

The WGM160P is a secure, low power, fully certified Wi-Fi module designed specifically for IoT applications. The device contains a 2.4 GHz 802.11 b/g/n Wi-Fi radio and a 72 Mhz Cortex M4 MCU - allowing you to run the complete Wi-Fi Stack, TCP/IP stack and your applications. Advanced peripherals like an Ethernet MAC and captouch allow you to reduce BOM and add features to your products.

The device supports Gecko OS- a next-gen IoT OS designed to abstract away the complexity of Wireless connectivity and reduce your development time.

The device is available with and without a built in antenna (reduces BOM) and a LF XTAL (lower sleep current for Wi-Fi)



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Module Specifications

Standards/IEEE 802.11 and WFA:

- b - symbol rates: up to 11 Mbps
- g - symbol rates: up to 54 Mbps
- n - symbol rates: up to 72.2 Mbps
- d - regulatory domains
- e - QoS as per definition in WMM specification
- i - as per definition in WPA2 specification
- w - protected management frames
- WMM Power save
- WPA/WPA2 Personal

Key RF Features:

- 1x1 802.11n with full 802.11 b/g compatibility, 72.2 Mbps
- Greenfield Tx/Rx for 802.11n optimal performance
- Short Guard Interval (SGI) for 802.11n optimal throughput
- A-MPDU Rx and Tx for high MAC throughput
- Block acknowledgement for several frames
- Rx Defragmentation
- Roaming supported
- Client, SoftAP modes supported
- Concurrent AP + STA supported
- Tx Power: +17 dBm
- Rx Sensitivity: -96.5 dBm

Certifications

FCC, CE and IC certified

Power Consumption:

- Rx (@1DSSS): 42.5 mA
- Tx (16 dBm @1DSSS): 148 mA
- Associated: DTIM3: TBD μ A
- Idle: TBD
- Power off: 0.5 μ A

Security and Encryption Features:

AES/WEP hardware acceleration

MCU Features and Host Interfaces:

- ARM Cortex-M4 at 72 MHz
- Ultra-low energy operation
- 80 μ A/MHz in Energy Mode 0 (EM0)
- 2.1 μ A EM2 Deep Sleep current (RTCC running with state and RAM retention)
- Hardware cryptographic engine supports AES, ECC, SHA, and TRNG
- UART and USB serial interfaces

Peripheral Interfaces:

- 12-bit ADC
- 12-bit DAC
- GPIO
- 2 x USART (UART/SPI/I2S)
- QSPI with Execute In Place (XIP) support
- Capacitive Touch Sensing in all GPIOs
- LESENSE
- 10/100 Ethernet MAC with RMII interface
- USB device (2.0 Full speed)
- I²C peripheral interfaces
- CAN
- Timers
- 5 V tolerant I/O

ROHS/REACH Compliant

Electrical Characteristics:

1.8-3.6 V

Temperature range:

-40 to +85 °C

2 x 2.4 GHz antenna pads for full antenna diversity support
 2.4 GHz co-existence; 2-, 3- and 4-wire
 PTA support

Getting Started with WGM160P Wi-Fi Module



[\(/products/development-tools/wireless/wi-fi/wgm160p-wifi-module-starter-kit\)](/products/development-tools/wireless/wi-fi/wgm160p-wifi-module-starter-kit)

[WGM160P Wi-Fi Module Wireless Starter Kit \(/products/development-tools/wireless/wi-fi/wgm160p-wifi-module-starter-kit\)](/products/development-tools/wireless/wi-fi/wgm160p-wifi-module-starter-kit)

The easiest way to begin development with WGM160P is the [WGM160P Starter Kit \(/products/development-tools/wireless/wi-fi/wgm160p-wifi-module-starter-kit\)](/products/development-tools/wireless/wi-fi/wgm160p-wifi-module-starter-kit).

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[More Tools](#)





[Getting Started with Wi-Fi >](#)

[Wi-Fi Software Documentation >](#)

[Wi-Fi Hardware Documentation >](#)

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WGM160P Modules

Part Number	Data Short	Development Kit	Description	Antenna	LFXTAL	TX Power (dBm)
WGM160PX22KGA2	 (/documents/login/data-shorts/wgm160p-datashort.pdf)	SLWSTK6121A (/products/development-tools/wireless/wi-fi/wgm160p-wifi-module-starter-kit)	Wi-Fi module with LFXTAL, 2.4 GHz, and built-in antenna	Onboard Chip Antenna	Yes	+16
WGM160P022KGA2	 (/documents/login/data-shorts/wgm160p-datashort.pdf)	SLWSTK6121A (/products/development-tools/wireless/wi-fi/wgm160p-wifi-module-starter-kit)	Wi-Fi module 2.4 GHz and built-in antenna	Onboard Chip Antenna	No	+16
WGM160PX22KGN2	 (/documents/login/data-shorts/wgm160p-datashort.pdf)	SLWSTK6121A (/products/development-tools/wireless/wi-fi/wgm160p-wifi-module-starter-kit)	Wi-Fi Module with LFXTAL, 2.4 GHz, and no antenna	RF Pad for use with external antenna	Yes	+16
WGM160P022KGN2	 (/documents/login/data-shorts/wgm160p-datashort.pdf)	SLWSTK6121A (/products/development-tools/wireless/wi-fi/wgm160p-wifi-module-starter-kit)	Wi-Fi module 2.4 GHz and no antenna	RF Pad for use with external antenna	No	+16

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