

GS2101M Series

Wi-Fi 802.11 b/g/n Embedded



Product Description

The GS2101M module series provides a quick, easy, and cost effective way for device and appliance manufacturers to add Wi-Fi connectivity to their products. The module runs the SEP 2.0 Smart Energy Profile stack and has 3 high bit-rate sigma-delta ADCs for high resolution sensor and measurement devices, making it ideally suited for smart energy and sensor applications.

This module provides a low cost, high speed serial to Wi-Fi connection to an embedded design built on an 8/16/32-bit microcontroller, over SDIO interfaces.

The GS2101M is an ideal solution for organizations with limited Wi-Fi or RF expertise or for those seeking faster time to market, as it reduces RF design time and removes the burden of testing and certification. The module is IEEE 802.11b/g/n compliant, and meets worldwide regulatory and Wi-Fi Alliance certification requirements.

The module runs the full Wi-Fi and TCP/IP networking stacks, completely offloading the host microcontroller. It supports a complete suite of security protocols, also without tasking the host microcontroller, including WPA/WPA2-Enterprise and Personal security modes, legacy WEP encryption, and upper layer security protocols such as TLS/SSL and HTTPS. Alternatively, it can be run self-contained without a host.

For ease of provisioning, the module can be set up simply and easily from a smartphone or laptop through the innovative Limited AP mode or with Wi-Fi Protected Setup (WPS).

The module is single sided with castellation on the edges for the I/O connections for soldering down on the product's baseboard.

The GS2101M has extended range with industry leading receiver sensitivity. It is available with an U.FL (Universal change) connector to add an external antenna for max

performance or a PCB antenna for convenience while saving space. It is US/Canada (FCC /IC), Europe (CE/ETSI) and Japan (TELEC) certified.

The GS2101M module is easily designed into embedded systems, allowing customers to develop a broad array of devices and appliances that connect to other local devices or the Internet over Wi-Fi. Applications include smart energy, smart home, healthcare and fitness, industrial controls, commercial building automation, and consumer electronics.

Key Benefits

- High resolution sensing and energy measurement
- Adds low power, high speed Wi-Fi and Internet connectivity to any device with a microcontroller and serial host interface
- Certified module reduces development time, testing and certification, accelerating time to market
- Full offload solution minimizes load on host processor
- Easy smartphone provisioning with Limited AP or Wi-Fi Protected Set-up (WPS)
- Ultra low power consumption through dynamic power management modes

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GS2101M Series

Radio Protocol	IEEE 802.11 b/g/n
Pin Count	40 pins
RF Output Power (Typical)	+14 dBm (802.11b), +11 dBm (802.11n)
Rx Sensitivity (Typical)	-91 dBm (802.11b 1Mbps), -88 dBm (802.11g 6Mbps), -88 dBm (802.11n MCS0)
RF Operating Frequency	2.4 - 2.495 GHz
Supported Data Rates	65, 58, 43, 29, 22, 14, 7 Mbps (802.11n), 54, 48, 36 24, 18, 12, 9, 6 Mbps (802.11g) 11, 5.5, 2, 1 Mbps (802.11b)
Antenna Option	External antenna (U.FL connector) or Onboard PCB trace antenna
Operating Temperature	-40° to +85°C
Security Protocols	WPA/WPA2 - Personal, WPA/WPA2 - Enterprise (PEAP, EAP-FAST, EAP-TLS, EAP-TTLS), WEP, TLS/SSL Client and Server, HTTPs
Networking Protocols	TCP, UDP, IPv4, TLS Client and Server, SMTP client, DHCP Client and Server v4, DHCP Client and Server v6, DNS Client and Server, mDNS, DNS-SD, HTTP Client and Server, and XML Parser
Certifications and Compliance	FCC, IC, TELEC, CE/ETSI, RoHS, Wi-Fi CERTIFIED, Wi-Fi Direct, WPS 2.0, SEP 2.0
I/O Interfaces	SPI, UART, SDIO, I2C, I2S, GPIO, ADC (16 bit), ADC (12 bit), JTAG
Host Connections	UART, SPI, SDIO
Internal Flash	4 MB
Outline Dimensions	18 mm x 25 mm x 2.5 mm [shield]
I/O Voltage	2.7-3.6V
Operating Voltage	2.7-3.6V
V _{BAT}	1.6-3.6V

Models

GS2101MIP	PCB Antenna
GS2101MIE	U.FL

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