

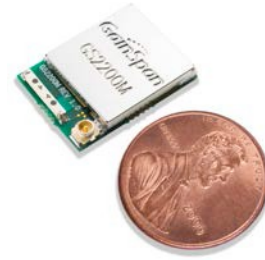




# GS2200MIZ

## 802.11b/g/n Mini-Module

*Ultra-Low Power, Ultra-Compact*



The GS2200MIZ is a fully integrated Wi-Fi module with an extremely small footprint that provides an easy, cost-effective way for manufacturers to add Wi-Fi connectivity to their products. Intended for a variety of size-constrained applications, the ~250 sq. mm module has an integrated chip antenna, 4MB FLASH, industry-leading SRAM resources, a high bit-rate 16-bit sigma-delta ADC, 12-bit ADC, and 19 GPIO supporting most interfaces.

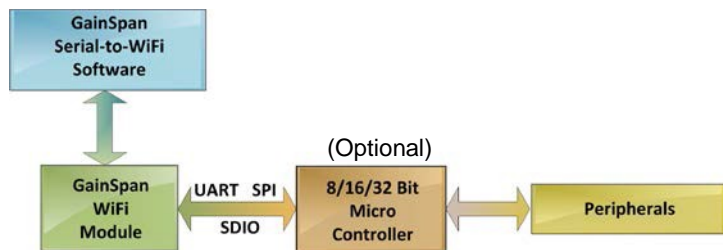
This module provides a low-cost, high-speed serial to Wi-Fi connection to an embedded design built on an 8/16/32-bit microcontroller, through an SDIO, SPI or UART interface.

The GS2200MIZ 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 major global 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, and upper layer security protocols such as TLS/SSL and HTTPs. Alternatively, it can be run self-contained without a host.

Easy to provision, the module can be set up from a smartphone or laptop through the innovative Limited AP mode or with Wi-Fi Protected Setup (WPS).

The module is single-sided with solder pads on the bottom for the I/O and PWR/GND connections for soldering down on the product's baseboard. It is intended for both line-powered and battery-powered applications.



**GS2200MIZ System Block Diagram**

SKU	Antenna
GS2200MIZ	Ceramic Chip Antenna

**BENEFITS:**

- Extremely compact for size-constrained applications
- Adds low power, high speed Wi-Fi and Internet connectivity to any device with a microcontroller and serial host interface or as the standalone application microcontroller
- Certified module reduces development time, testing and certification, accelerating time to market
- Easy smartphone provisioning with Limited AP or Wi-Fi Protected Set-up (WPS)
- Ultra-low power through dynamic power management modes and optional off module DC to DC components

**FEATURES:**

- 16-bit Sigma-Delta ADC
- 12-bit ADC
- IEEE 802.11 b/g/n with PHY rates up to 72 Mbps
- Limited AP, Station, Wi-Fi Direct, Concurrent mode
- UART, SPI, SDIO interface to microcontroller
- 19 configurable I/O
- Interface clock rate: 40 MHz on SDIO, 30 MHz on SPI (master), 10 MHz on SPI (slave), and 921k baud on UART
- Extensive networking stack and services
- Security: 802.11i, WPA/2–Personal and Enterprise, TLS 1.2, 4K digital certificates

**MODULE HIGHLIGHTS:**

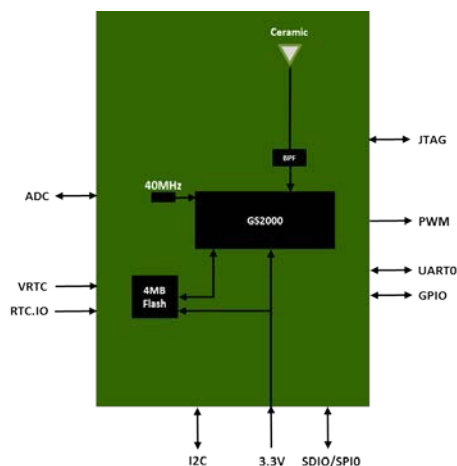
- Power Source
  - 3.3V main supply
  - 3.3V or 1.8V I/O
  - 1.6V to 3.6V Battery
- Certification: FCC, IC, ETSI, MIC, Wi-Fi
- I/O interfaces : SPI, UART, SDIO, I<sup>2</sup>C, I<sup>2</sup>S, GPIO, ADC, JTAG, PWM
- Extended Commercial Grade

**GS2200MIZ MODULE SPECIFICATIONS**

<b>Radio Protocol</b>	IEEE 802.11b/g/n
<b>Pin Count</b>	66 pins (30 GND)
<b>RF Output Power (Typical)</b>	+15 dBm (802.11b 1Mbps), +14dBm (802.11g 6Mbps), +14dBm (802.11n MCS0)
<b>Rx Sensitivity (Typical)</b>	-91 dBm (802.11b 1Mbps), -88 dBm (802.11g 6Mbps), -88 dBm (802.11nMCS0)
<b>RF Operating Frequency</b>	2.4 - 2.495 GHz
<b>Supported Data Rates</b>	72, 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)
<b>Antenna Option</b>	Internal ceramic chip antenna
<b>Operating Temperature</b>	-20° to +70°C
<b>Security Protocols</b>	WPA/WPA2 - Personal, WPA/WPA2 - Enterprise (PEAP, EAP-FAST, EAP-TLS, EAP-TTLS), WEP, TLS/SSL Client and Server, HTTPs
<b>Networking Protocols</b>	TCP, UDP, IPv4, IPv6, TLS Client and Server, SNTP 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
<b>Certifications and Compliance</b>	FCC, IC, TELEC, CE/ETSI, RoHS, Wi-Fi CERTIFIED
<b>I/O Interfaces</b>	SPI, UART, SDIO, I <sup>2</sup> C, I <sup>2</sup> S,GPIO (19), 16 & 12 bit ADC, JTAG, PWM (3), RTC
<b>Host Connections</b>	SPI, UART, SDIO
<b>Internal Flash</b>	4 MB
<b>Outline Dimensions</b>	13.5 mm x 17.85 mm x 2.1 mm
<b>I/O Voltage</b>	3.3V or 1.8V
<b>Operating Voltage</b>	2.7-3.6V
<b>V<sub>BAT</sub></b>	1.6-3.6V

**TARGET APPLICATIONS**

The GainSpan GS2200MIZ 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 to the Internet over Wi-Fi. Applications include smart energy, healthcare and fitness, industrial controls, commercial building automation, and audio/video consumer electronics.



**GS2200MIZ Block Diagram**

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