GainSpan GS1500M

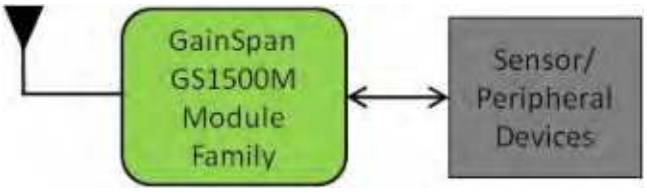
802.11b/g/n Low Power Wi-Fi® Module



PRODUCT OVERVIEW

The GS1500M is a fully certified module offering quick, easy and cost effective way for OEMs to enable leading edge Wi-Fi connectivity (802.11b/g/n) in their platforms. The module provides multiple serial UART or SPI interfaces, enabling connection to any embedded design utilizing the 8/16/32-bit microcontroller via simple commands. The GS1500M is an ideal solution for OEMs with limited or no Wi-Fi or RF expertise. The GS1500M solution dramatically reduces development time and eliminates the burden of testing and certification, allowing customers to exclusively focus on their core platforms. The module supports Wi-Fi PHY rates up to 72.2 Mbps and is fully compliant with 802.11b/g/n and meets worldwide regulatory requirements. The GS1500M also provides support for a peer-to-peer networking capabilities allowing Wi-Fi devices to connect to one another without an access point, enabling easy transfer of content anytime, anywhere.

Multiple software configurations are available for running a stack or network services on the module. For applications utilizing a small 8 bit microcontroller host, the module supports a serial to Wi-Fi function and runs the full Wi-Fi and TCP/IP networking stacks, completely offloading the host. For applications utilizing more powerful microcontrollers, the networking stack and services can reside on the host while the module provides the IP to Wi-Fi functionality. In addition, it supports WEP/WPA/WPA2 security, Limited AP mode, Embedded Web Server as well as Wi-Fi Protected Setup (WPS) for ease of provisioning.



GS1500M based embedded Wi-Fi IO application



GS1500M based embedded Serial/IP to Wi-Fi application

The module SKU is single sided, pin compatible with previous GS1011M modules, with castellation on the edges for I/O connection so module can be soldered down on customer application base-board.

SKU	Power Amplifier	Antenna Option
GS1500M	Internal PA	PCB Trace or External Antenna (uFL)

BENEFITS

- **Brings leading edge Wi-Fi and web connectivity to any platform with a microcontroller and serial HOST interface (UART or SPI)**
- **Self-contained solution minimizes host processor loading**
- **Reduces development time while accelerating time to market**
- **Pin and software compatible with GS1011M**
- **Operates with standard 802.11b/g/n access points at speeds of up to 72.2 Mbps – Infrastructure/Limited-AP modes**
- **Easy device provisioning using Limited-AP or Wi-Fi Protected Set-up (WPS)**
- **Low power consumption through dynamic power management modes**
  - **Standby, Sleep and Deep Sleep**

FEATURES

- **Highly integrated 802.11b/g/n Wi-Fi radio**
- **Supports peer-to-peer networking**
- **Two serial UART ports**
  - **Clock Data rates of up to 921.6kbps**
- **Two SPI ports (Master and Slave modes)**
  - **Clock Data rates of up to 3Mbps**
- **Firmware provides full Wi-Fi and networking stack services including TCP/UDP/IP, HTTP, DNS, DHCP and SSL**
- **802.11i Security**
  - **WEP,**
  - **WPA/WPA2 Personal,**
  - **WPA/WPA2 Enterprise**

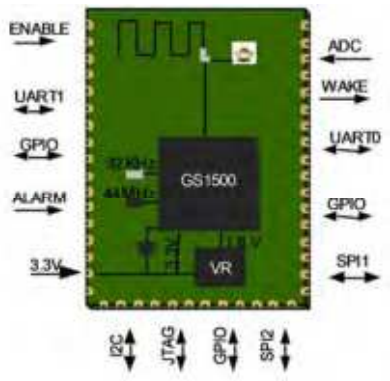
MODULE HIGHLIGHTS

- **Single power source of 3.3V**
- **Certified Modules (FCC/IC/ETSI)**
- **Rich I/O interfaces such as SPI, UART, GPIO, I2C, ADC and JTAG**

GS1500M MODULE SPECIFICATIONS

Radio Protocol	Supports IEEE 802.11b, 11g, 11n single stream
RF Output Power (Typical)	14 dBm (802.11b), 12dBm (802.11n)
RF Operating Frequency	2.412 - 2.484 GHz
Supported Data Rates	802.11b (CCK): 1, 2, 5.5, 11 Mbps 802.11g (OFDM): 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n (1x1 HT20): MCS0-7
Antenna Options	PCB Trace or uFL connector for external antenna
Operating Temperature	Industrial (-40° to +85°C)
Security Protocols	WEP, 802.11i WPA/WPA2 Personal Security (AES and TKIP), Enterprise Security (EAP-FAST, EAP-TLS, EAP-TTLS, PEAP)
Networking Protocols	UDP, TCP/IP (IPv4), DHCP, ARP, DNS, SSL, HTTP/HTTPS Client and Server
Certifications and Compliance	FCC, IC, ETSI, RoHS, Wi-Fi Alliance
I/O Interface	UART (2), SPI (2), I2C, ADC (2), WAKE, ALARM (2), GPIOs, PWM, JTAG
Dimensions	1.45 in x 0.9 in
Power Source	3.3V

GS1500M BLOCK DIAGRAM



TARGET APPLICATIONS

The GainSpan GS1500M module is easily designed into embedded systems, allowing customers to develop a broad array of platforms that will connect to the Internet. In applications such as healthcare and fitness, smart energy, industrial controls, commercial/building automation, and consumer electronics.



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