



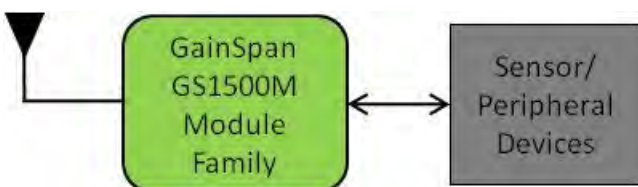
GainSpan GS1500M

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

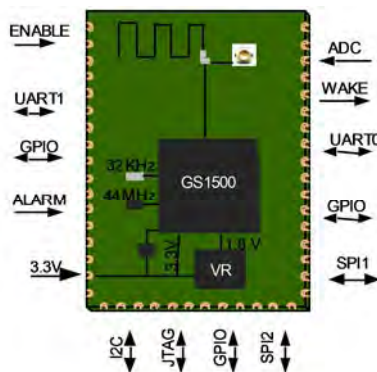
- Single power source of 3.3V
- Certified Modules (FCC/IC/ETSI)
- Rich I/O interfaces such as SPI, UART, GPIO, I2C, ADC and JTAG



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.



GainSpan®