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# GS2011M/GS2100M Evaluation Board (EVB)

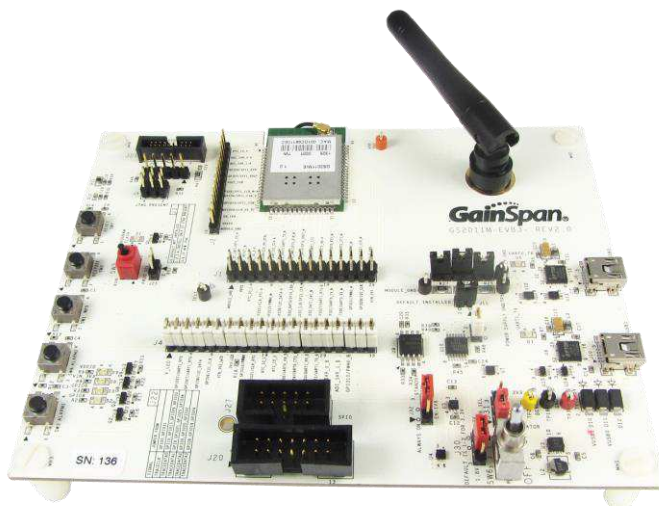
## PRODUCT OVERVIEW

The GainSpan GS2011M and GS2100M Evaluation Boards (EVB) are flexible hardware platforms to evaluate the capabilities of GainSpan's ultra-low power Wi-Fi SoC GS2000 and enable development of hosted or hostless application software. They provide a quick, easy, and cost-effective platform for customers to add Wi-Fi capabilities to their products with minor impact on the host microcontroller firmware. Users can use the Serial-to-WiFi software packaged with the EVB to build a hosted application or program the board with custom binaries built using the GainSpan SDK Builder or GS2000 SDK.

The EVBs bring out all the pins of the GS2011M/GS2100M modules, and exposes features such as high-speed SPI and SDIO interfaces that support high throughput audio and video streaming applications, a high resolution 16-bit ADC for energy measurements in smart energy applications, temperature and light sensors for quick development of sensor applications, I2C interface for sensors and I2S interface to external DAC for audio applications. The EVB is part of the GS2000 SDK and supports the JTAG interface for software development. It also provides a daughter card connector that customers can use to connect to their host processor board or custom application boards.

The EVB works in conjunction with the Serial-to-WiFi software, but it can be used for development of hostless applications as well, built using the GS2000 SDK or the SDK Builder.

The GS2011M/GS2100M EVB provides all the hardware and software necessary to quickly set up a serial (UART or SPI) based link to a PC or external microcontroller. It has various jumpers, switches, push buttons and LEDs that provide support for evaluating different features and configurations based on the firmware loaded.



## BENEFITS:

- Flexible hardware platforms for evaluation of capabilities of the GS2000 SoC and enable customer application development
- Exposes all the features of the GS2011M/GS2100M Wi-Fi modules, allowing faster development of applications
- Easy integration of Wi-Fi and web connectivity to embedded devices with microcontroller, over UART or SPI interface
- Serial-to-WiFi software allows easy addition of Wi-Fi capabilities to hosted embedded system

## FEATURES:

- Supports highly integrated 802.11b/g/n GS2011M and GS2100M Wi-Fi modules
- Supports multiple serial ports
  - UART: up to 921 Kbps
  - SPI: up to 30MHz (master mode) 10MHz (slave mode)
  - SDIO: up to 40MHz
- High resolution sensing and energy measurements for smart energy applications
- Temperature and light sensors for quick development of sensor applications
- Comes programmed with Serial-to-WiFi software including full Wi-Fi stack - Wi-Fi security (WEP, WPA/2), WPS and networking stack including TCP/UDP/IP, DNS, DHCP, HTTP/s, DTLS, CoAP, TLS/SSL
- Push button for WPS, Alarms, Factory Restore, and Reset
- JTAG interface for software development
- Daughter card connector for connection to host processor or application boards

**AT COMMAND SET**

The ‘AT’ command set supports the full range of capabilities provided by the underlying GainSpan network services software that abstracts the complexity of IP networking and Wi-Fi communication from the embedded application while giving it complete control over the AT command set. The table below lists some of the commands. Please refer to the GS2000 Application Programmers Reference Guide for a more complete list and descriptions of all the commands.

Types	Commands
<b>Serial Interface Configuration</b>	Set Serial Parameters Hardware flow control
<b>Profile Management</b>	Load/Save/Restore profiles
<b>Wi-Fi Interface</b>	Set/query MAC address Scan/associate/disassociate
<b>Security</b>	Enable/set security
<b>Network interface</b>	Static or DHCP DNS lookup
<b>Connection Management</b>	TCP client/server Open sockets Close connections
<b>Power Management</b>	Enable/disable deep sleep and standby
<b>Services</b>	Upgrade firmware, Provisioning

**EVALUATION BOARD SPECIFICATIONS**

Feature	Description
<b>RF Module</b>	GS2011MIE/GS2100MIE – Ultra-Low Power Module
<b>Radio Protocol</b>	IEEE 802.11 b/g/n, 2.4GHz
<b>Antenna Type</b>	External antenna (u.FL connector)
<b>Power Source</b>	Mini-USB Connectors USB0 or USB1
<b>I/O Interfaces</b>	UART (16450/16550 compatible), SPI, SDIO, GPIO, I2C, I2S (GS2011M only), ADC (12-bit) (GS2011M only), and JTAG (Debugging)
<b>On/Off Switch</b>	Power ON/OFF switch
<b>Push Buttons</b>	Alarms, WPS, Factory Restore, and Reset
<b>Program/Run Switch</b>	Switching between run and programming modes
<b>Power Measurement Jumpers</b>	Power measurement in various power save modes
<b>LEDs</b>	Power, Run/Program, UART, and GPIOs
<b>Sensors</b>	Temperature and Light (GS2011M only)
<b>ADC Connector</b>	Analog to Digital Converter (16-bit) resolution sensor and measurement devices (GS2100M only)
<b>Dimensions</b>	GS2011M/GS2100M – 4.358 in. (110.7mm) x 5.594 in. (142.1mm)
<b>Daughter Board Connector</b>	Connect daughter boards such as hosts, sensors, memory devices

**EVALUATION BOARD ORDERING INFORMATION**

ITEM	PART NUMBER	Description
<b>GS2011M Evaluation Board</b>	GS2011MIE-EVB3-S2W	Serial-to-WiFi Evaluation Board with GS2011MIE module
<b>GS2100M Evaluation Board</b>	GS2100MIE-EVB3-S2W	Serial-to-WiFi Evaluation Board with GS2100MIE module