



# GainSpan Serial to Wi-Fi® Evaluation Kit

**Complete Platform for Evaluating GainSpan's  
Wireless Single Chip and Serial-to-WiFi Software**

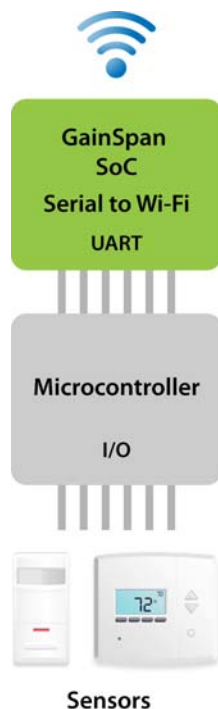
## PRODUCT OVERVIEW

The Serial-to-WiFi Evaluation Kit provides GainSpan's customers the mean to evaluate the capabilities of the GS1011 ultra-low power wireless system-on-a-chip and the Serial-to-WiFi embedded software for Wi-Fi networks. The Serial-to-WiFi embedded software allows devices and appliances manufacturers to easily add Wi-Fi capabilities to their products with minor impact on the host microcontroller firmware.

The Serial-to-WiFi Evaluation Kit provides all the hardware and software necessary to quickly set up a serial (UART or SPI) based link to a PC or external microcontroller. In order to evaluate the ease of adding secure Wi-Fi communications to a product using GainSpan's AT command set, the kit includes all the software tools necessary for configuration of Serial-to-WiFi and GS1011 modules, data transfer using "AT" command-set and protocol analyzer for validation of packet & frame fields..

The Serial-to-WiFi Evaluation Kit enables GainSpan customers to develop software on their existing microcontrollers to support the "AT" command set, and connect it to the UART interface on the evaluation kit reference board.

The 'AT' command set supports the full range of capabilities provided by the underlying GainSpan Embedded Platform Software, including scanning and reporting SSID's, power management and over the air firmware upgrade. DHCP and DNS server support allows the node to easily interact with existing infrastructure and the internet.



*GS1011-based Serial2WiFi with external processor*



## BENEFITS:

- **Ease of adding Wi-Fi connectivity to any device with a microcontroller and serial host interface (UART or SPI)**
- **Minimal Serial to Wi-Fi "driver" footprint on host microcontroller and minor changes to host firmware.**
- **Offloads smaller host microcontrollers from the full Wi-Fi and TCP/ IP networking stacks**
- **Simple AT commands for configuration and data communication**

## FEATURES:

### UART interface:

- Up to 921 Kbps data rate

### 802.11 b/g connection

- Infrastructure or Adhoc mode

### 802.11i Security:

- WPA2-PSK, WPA, WEP

### Network connections (TCP/IP/UDP)

- TCP/UDP Client & Server modes
- DNS lookup
- Static IP or DHCP

### Power Management Commands

- DeepSleep
- Standby (lowest power state)

## KIT CONTENTS

- One GS1011 board with Serial to WiFi Application with 3.6V AA lithium batteries
- One USB-to-serial cables for node provisioning and configuration via PC
- One preconfigured 802.11b/g Access point
- One USB memory stick containing GainSpan software and documentation



**GS1011 REFERENCE BOARD SPECIFICATIONS**

<b>Radio Protocol</b>	IEEE 802.11b/g/n compatible
<b>RF Output Power (Typical)</b>	9dbm with integrated power amplifier
<b>RF Operating Frequency</b>	2.4 - 2.497 GHz
<b>Antenna Specifications</b>	2.45GHz, 50-ohm monopole with SMA connector
<b>I/O Port</b>	6-pin serial UART interface, 15540 compatible Cable to connect to host PC USB port included
<b>Power Source</b>	3.6V, 2100mAh Lithium battery size AA (included)
<b>Physical Dimensions</b>	Length: 2.36 in, Width: 1.39 in, Height: 1.04 in

**PARTIAL LIST OF SERIAL-TO-WIFI 'AT' COMMANDS:**

UART INTERFACE:

- SET UART PARAMETERS
- HARDWARE FLOW CONTROL

PROFILE MANAGEMENT:

- LOAD/SAVE/RESTORE PROFILE n

WI-FI INTERFACE:

- SET/QUERY MAC ADDRESS
- SCAN/ASSOCIATE/DISASSOCIATE

SECURITY:

- ENABLE/SET SECURITY

NETWORK INTERFACE:

- STATIC or DHCP
- DNS LOOKUP

CONNECTION MANAGEMENT:

- TCP CLIENT/TCP SERVER
- OPEN SOCKETS
- CLOSE CONNECTIONS

POWER MANAGEMENT:

- ENABLE/ENTER DEEPSLEEP/ STANDBY

SERVICES:

- UPGRADE FIRMWARE

