



# Serial to Wi-Fi® Adapter Board

## PRODUCT OVERVIEW

The Serial to Wi-Fi Adapter Boards provide the means to evaluate the capabilities of GainSpan's low power Wi-Fi modules and the Serial to Wi-Fi embedded software, and develop Wi-Fi enabled devices using Renesas microcontrollers. They are designed to plug into Renesas Development Kits (RDK) through the Application Header Interface or the PMOD interface.

The Wi-Fi adapter boards are available in two configurations:

- The WAB-GS1011-MIP supports IEEE 802.11b protocol and includes a GainSpan GS1011MIP soldered down module
- The WAB-GS-1500M supports IEEE 802.11b/g/n protocols and includes a GainSpan GS1500M soldered down module

The Wi-Fi adapter boards come with pre-loaded serial to Wi-Fi firmware that supports an embedded HTTP server with Wi-Fi and IP network configuration pages, as well as the limited AP capability for ease of provisioning. The Serial to Wi-Fi embedded software allows devices and appliances manufacturers to easily add Wi-Fi capabilities to their products with minor impact on the host microcontroller firmware.

Drivers are available or in development for most Renesas microcontrollers including RL78, RX62, RX63, R8C, V850, SuperH, 78K0, 78K0R. The drivers have a small footprint so they can be used with IAR Embedded Workbench-Kickstart Edition. To download software and documentation go to:

<http://www.gainspan.com/products/renesasadapter.php>

The Wi-Fi adapter boards have built-in external flash for reliable over the air firmware upgrade, factory restore configuration as well as data storage such as for web pages.



## WIFI-ADAPTER BOARD DETAILS:

| Feature                          | Description                                                              |
|----------------------------------|--------------------------------------------------------------------------|
| <b>Radio Protocol</b>            | IEEE 802.11b for WAB-GW-GS1011MIP<br>IEEE 802.11b/g/n for WAB-GW-GS1500M |
| <b>RF Module</b>                 | GS1011MIP or GS1500M                                                     |
| <b>RF Output Power (Typical)</b> | 8 dBm for GS1011MIP<br>14 dBm (802.11b) 12dBm (802.11n) for GS1500M      |
| <b>Radio Frequency</b>           | 2.4 – 2.497 GHz                                                          |
| <b>Antenna Type</b>              | On-board PCB Trace                                                       |
| <b>I/O Port</b>                  | SPI or UART                                                              |
| <b>Jumper</b>                    | To select UART or SPI<br>Current measurement mode                        |
| <b>Switch</b>                    | Factory Code Restore                                                     |
| <b>Interfaces/ Connectors</b>    | Factory Application Header Interface, PMOD interface                     |
| <b>Power Source</b>              | From Renesas RDK or PMOD                                                 |
| <b>Dimensions (in)</b>           | TBD                                                                      |

## WI-FI ADAPTER BOARD ORDERING INFORMATION

| ITEM                       | PART NUMBER      | Description                                                                          |
|----------------------------|------------------|--------------------------------------------------------------------------------------|
| GS1011 Wi-Fi Adapter Board | WAB-GW-GS1011MIP | 802.11b Adapter Board with a GS1011MIP module (internal PA and on-board PCB antenna) |
| GS1500 Wi-Fi Adapter Board | WAB-GW-GS1500M   | 802.11b/g/n Adapter Board with GS1500M module                                        |

