SG923-0003

SDIO/SPI Embedded Software Eval Kit

The SG923-0003 SDIO/SPI Embedded Software Eval Kit is a software integration evaluation kit for the SAGRAD Wi-Fi SG901-1039 fully integrated 802.11b & g ultra-low power Wi-Fi radio module. The evaluation kit includes all the hardware necessary for successful software integration. Processor and O/S specific drivers may be available from SAGRAD. It is recommended that the user contact SAGRAD directly for information regarding available Processor and O/S specific drivers.

The evaluation kit includes:

    (1) SG901-1039 802.11 b & g fully FCC certified WiFi module
    (1) SPI 3.3V to 1.8V Level translator interface board SG909-0034
    (1) SDIO 3.3V to 1.8V Level translator interface board SG909-0032
    (1) SDIO or SPI 1.8V interface board SG909-0033
    (1) Antenna
    (1) CD (see page 5 for contents of CD)

FEATURES

- Fully integrated, IEEE WLAN and FCC compliant 802.11b&g module
- Standard SDIO mechanical interface and pin out access for SPI wiring.
- Power Save Mode low frequency clock oscillator on all evaluation boards
- +15 dBm power @ antenna port
- U.FL-R-SMT antenna connector

SDIO EVALUATION

(Figure 2)

2

1
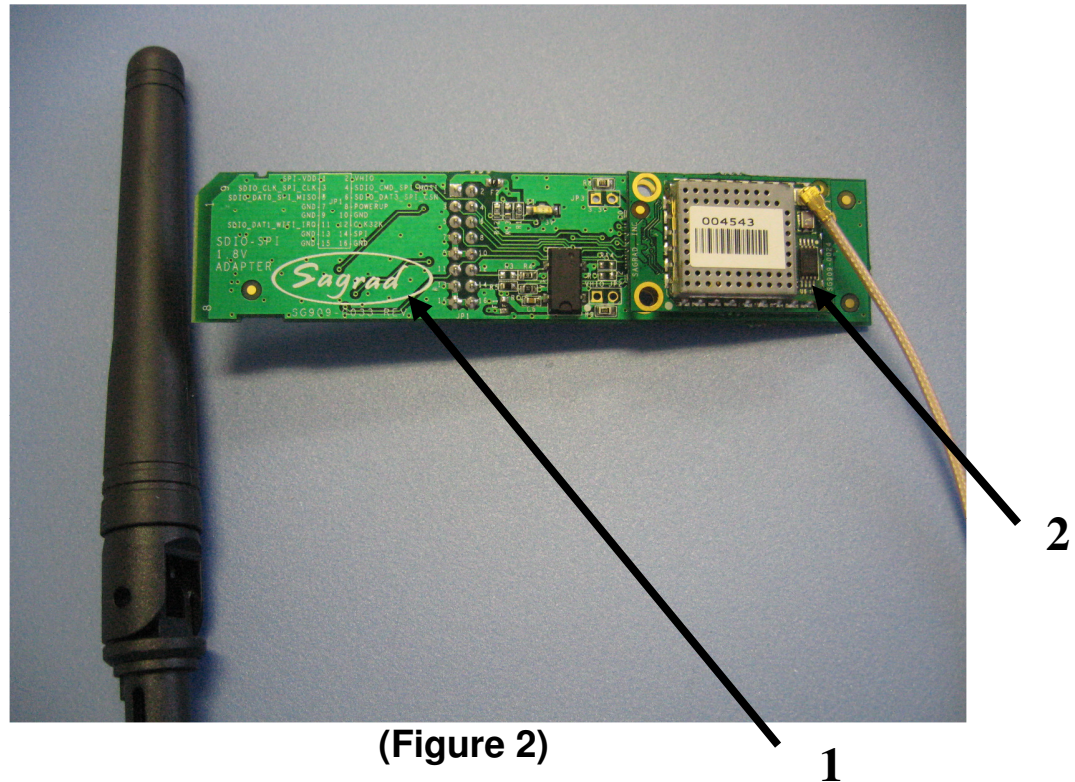
BOARD ASSEMBLY FOR SDIO EVALUATION
(Refer to figure 2)

ITEM #   **DESCRIPTION**
1   SDIO or SPI 1.8V INTERFACE BOARD
2   WIFI MODULE

ASSEMBLY INSTRUCTIONS (see figure 2):

1. Install WiFi module (2) in figure 2 to the Interface board (1)
2. Assembled boards will appear as in figure.

Instructions to connect the SDIO interface to the SG909-0032 (SDIO 3.3V) evaluation board.

The SDIO interface follows the standard 3V SDIO Interface and is plug and play. There is no need to use an external supply.

Instructions to connect the SDIO interface to the SG909-0033 (SDIO/SPI 1.8V) evaluation board.

The SDIO interface follows the standard SDIO slide card mechanical interface with the exception that the SDIO VDD (SDIO PIN 4) is required to be 1.8V. The 1.8V voltage establishes the SDIO bus voltage rail applied to the WLAN module and the low frequency clock oscillator.

1. Connect a +3.0 to 3.6V (min. 200mA) supply to JP1 pin 1. This is required to power the WLAN module Transmit Power Amplifier, voltage regulators, and TX controls.
2. Pins 7, 9, 10, 13, 15 and 16 of JP1 are ground returns for the external supply (all are tied together in the evaluation board).

Instructions to connect the SPI interface to the SG909-0033 (SDIO/SPI 1.8V) evaluation board

1. Connect a +3.0 to 3.6V (min 200mA) supply to JP1 pin 1. This is required to power the WLAN module Transmit Power Amplifier and TX controls.
2. Connect a 1.8V supply to JP1 pin 2. This voltage establishes the bus voltage rail applied to the WLAN module in the SPI interface as well as powers the low frequency crystal oscillator for power save mode (SPI_SLEEPCLK)
3. Connect the SPI Clock to JP1 pin 3
4. Connect the SPI Master out, Slave in (MOSI) to JP1 pin 4
5. Connect the SPI Master in, Slave out (MISO) to JP1 pin 5
6. Connect the SPI Chip Select to JP1 pin 6
7. Connect the power up control to JP1 pin 8. This pin is normally pulled to approximately 2V upon application of the 3V to 3.6V supply, powering the WLAN module on. It is used to power down the WLAN when grounded.
8. Connect the SPI Interrupt Request (IRQ) to JP1 pin 11
9. Connect the 3.0 to 3.6V supply to JP1 pin 14. This pin selects the SPI mode of operation for all Sagrad modules with the exception of the SG901-1030 Wi-Fi module where it becomes the antenna diversity control.
10. Pins 7, 9, 10, 13, 15 and 16 are the ground returns for the SPI signals and external power supply (all are tied together in the evaluation board).

Instructions to connect the SPI interface to the SG909-0034 (SPI 3.3V) evaluation board

1. Connect a +3.0 to 3.6V (min 200mA) supply to JP1 pin 2. This is required to power the WLAN module Transmit Power Amplifier, voltage regulators, low frequency clock oscillator and TX controls.
2. Connect the SPI Clock to JP1 pin 3
3. Connect the SPI Master out, Slave in (MOSI) to JP1 pin 4
4. Connect the SPI Master in, Slave out (MISO) to JP1 pin 5
5. Connect the SPI Chip Select to JP1 pin 6
6. Connect the power up control to JP1 pin 8. This pin is normally pulled to approximately 2V upon application of the 3V to 3.6V supply, powering the WLAN module on. It is used to power down the WLAN when grounded.
7. Connect the SPI Interrupt Request (IRQ) to JP1 pin 11
8. Connect the 3.0 to 3.6V supply to JP1 pin 14. This is optional. The WLAN Module has a pull up resistor for enabling SPI operation. This pin selects the SPI/SDIO mode of operation for all Sagrad modules with the exception of SG901-1030 Wi-Fi module where it becomes the antenna diversity control.
9. Pins 7, 9, 10, 13, 15 and 16 are the ground returns for SPI signals and the external power supply. (All tied together in the evaluation board)
10. JP1 pin 1 is "no connect"

SOFTWARE

CD Contents:

1. Readme file
2. Data sheets for modules and Evaluation kits
3. SG903-0003 – Embedded Software EVK
   a. Hardware Schematics & BOM
   b. Software Documentation
4. SG923-0002 – Performance EVK
   a. Driver Software
   b. Hardware Files
5. STLC4560
   a. Datasheets
   b. ST Micro Application Notes
6. Application Notes

SUPPORT

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