SG923-0010
Evaluation Kit for SG901-1091 Radio Module

Overview

SG923-0010 Is an evaluation Kit used to simplify the rapid evaluation and software integration of the SG901-1091 Radio Module. The EVK allows for easy access to the SDIO interface via a standard SDIO hardware connector   The SDIO connector is designed to plug into processor development boards for rapid software testing.

The SG901-1080 Carrier board which hosts the SG901-1091 board also contains a debug connector which supports 1.8V UART signaling.

The evaluation kit is powered and provides power to the module from a 3.3V SDIO socket or external input for instrumentation. A 2.4GHz antenna connection port as well as an optional external Antenna diversity interface allow for complete system testing.

The Kit consists of a SG901-1091 soldered into a Carrier Board, Sagrad Part Number SG901-1080, Figure 1 and a SDIO Adapter Board, Sagrad Part number SG901-1042 depicted on Figure 2.

Features

- Easy to use SDIO connector for common processors EVK.
- Full application circuit example.
- Standard 3.3V Powered SDIO on Insert
- On board Regulator and Sleep Clock Oscillator
- Simple Client application
- Versatile SDIO Bus

Ordering Information

Packaging	Order Number
Evaluation Kit	SG923-0010

Software Support and Drivers

An approval process and SLA is required to obtain the software package. Updated versions of all software are available at: www.sagrad.com/support/1091
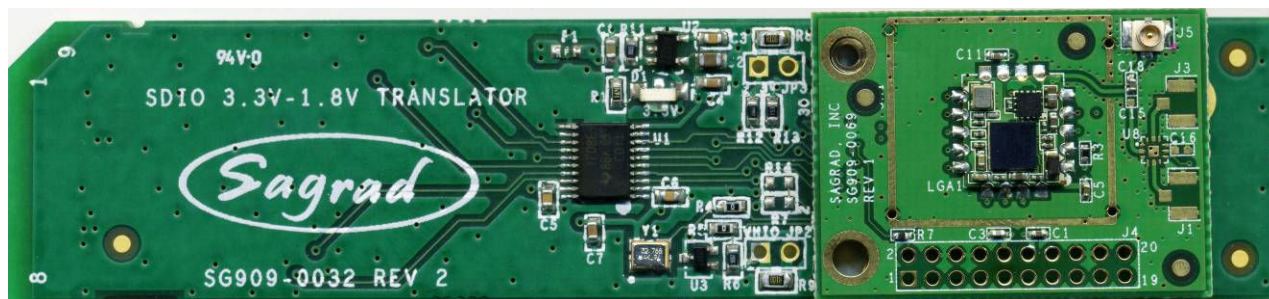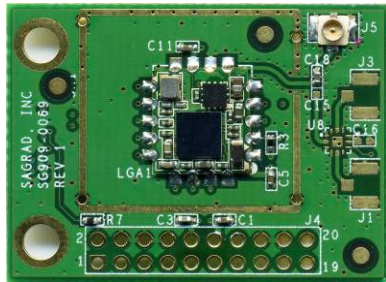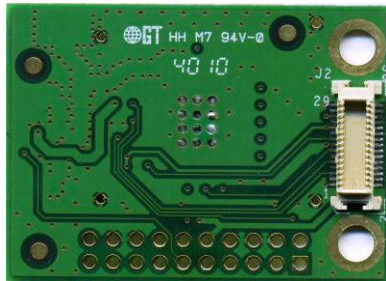
Full Assembly View

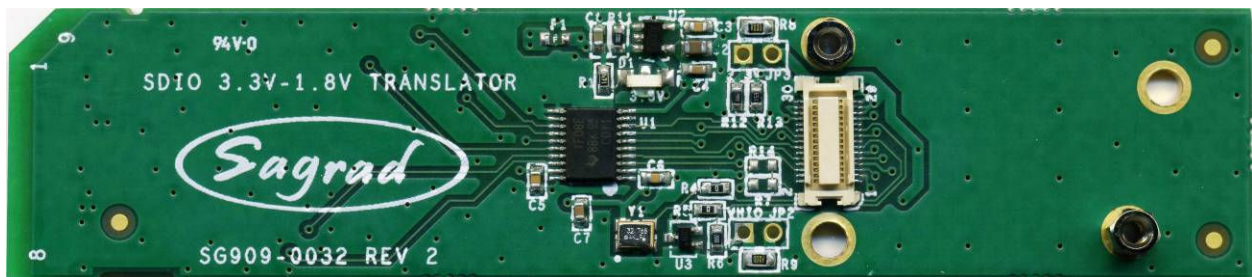**FIGURE 1**: SG901-1080 Carrier Board
(Includes the SG901-1091 Module)

Top View

Bottom View

FIGURE 2: SG901-1069 Adapter Board

Top View

Bottom View
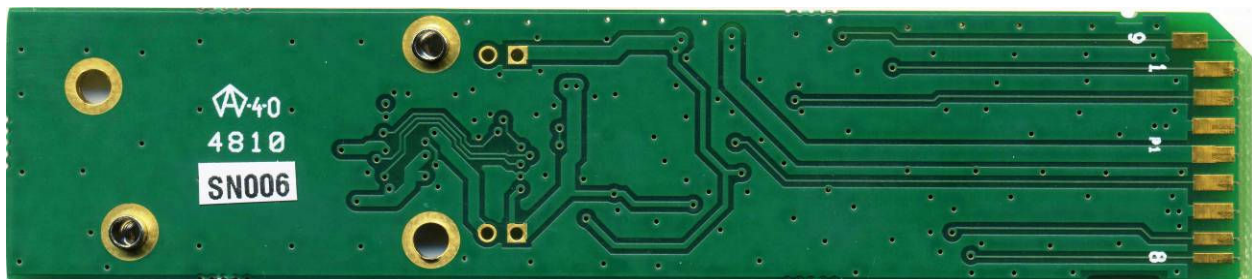
SG923-0010 Evaluation Kit Boards Main Components

Optional Diversity Antenna Access including Switch module

J4

SG901-1091 Radio Module

SDIO INSERT

MOLEX Connector

Direct Antenna Connector

SDIO 3.3V-1.8V TRANSLATOR

SG909-0032 REV 2

I/O Voltage translator

Sleep Clock Oscillator

2.4GHz Antenna
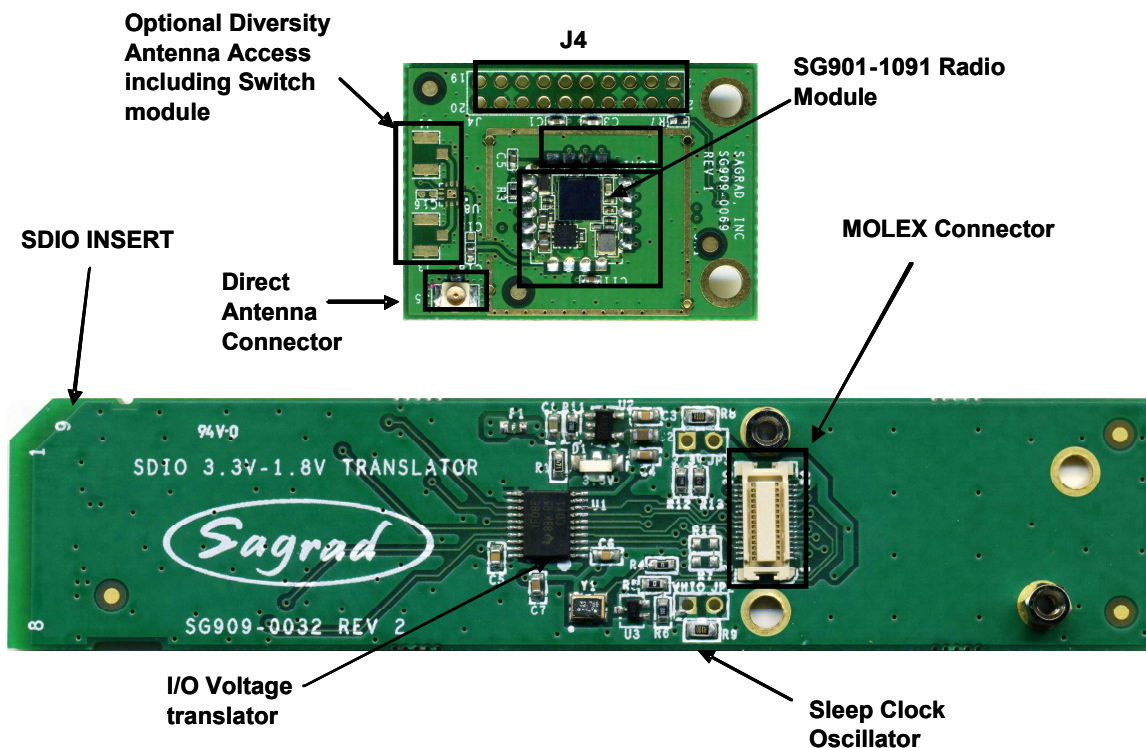
Connector Descriptions

SDIO INSERT Pin Descriptions

SIGNAL NAME	PIN NUMBER	DESCRIPTION	NOTES
SDIO_DAT[3]	1	SDIO DATA3	Voltage translated and mapped to SDD3_CS Pin 13 on SG901-1091 Module
SDIO_CMD	2	SDIO CMD	Voltage translated Mapped to CMD_MOSI Pin 11 on SG901-1091 Module
VSS1	3	VSS, Ground Return	
VDD	4	SDIO_VDD, 3.3V Supply	Connected to a 3.3 to 1.8V regulator generating the VHIO 1.8V supply for the the SG901-1091. It is also connected directly to the VBAT Pin 8 on SG901-1091 Module. Fuse Protected.
CLK	5	SDIO Clock	Voltage translated and mapped to CLK Pin 10 on SG901-1091 Module
VSS2	6	VSS, Ground Return	
SDIO_DAT[0]	7	SDIO DATA0	Voltage translated and mapped to SDD0_MISO Pin 4 on SG901-1091 Module
SDIO_DAT[1]	8	SDIO DATA1	Voltage translated and mapped to SDD1_IRQ Pin 3 on SG901-1091 Module
SDIO_DAT[2]	9	SDIO DATA2	Voltage translated and mapped to SDD2_HSEL Pin 1 on SG901-1091 Module
NOTE: Pin 9 of the standard SDIO pin out is recessed and collocated with pin 1			

J4 Pin Descriptions

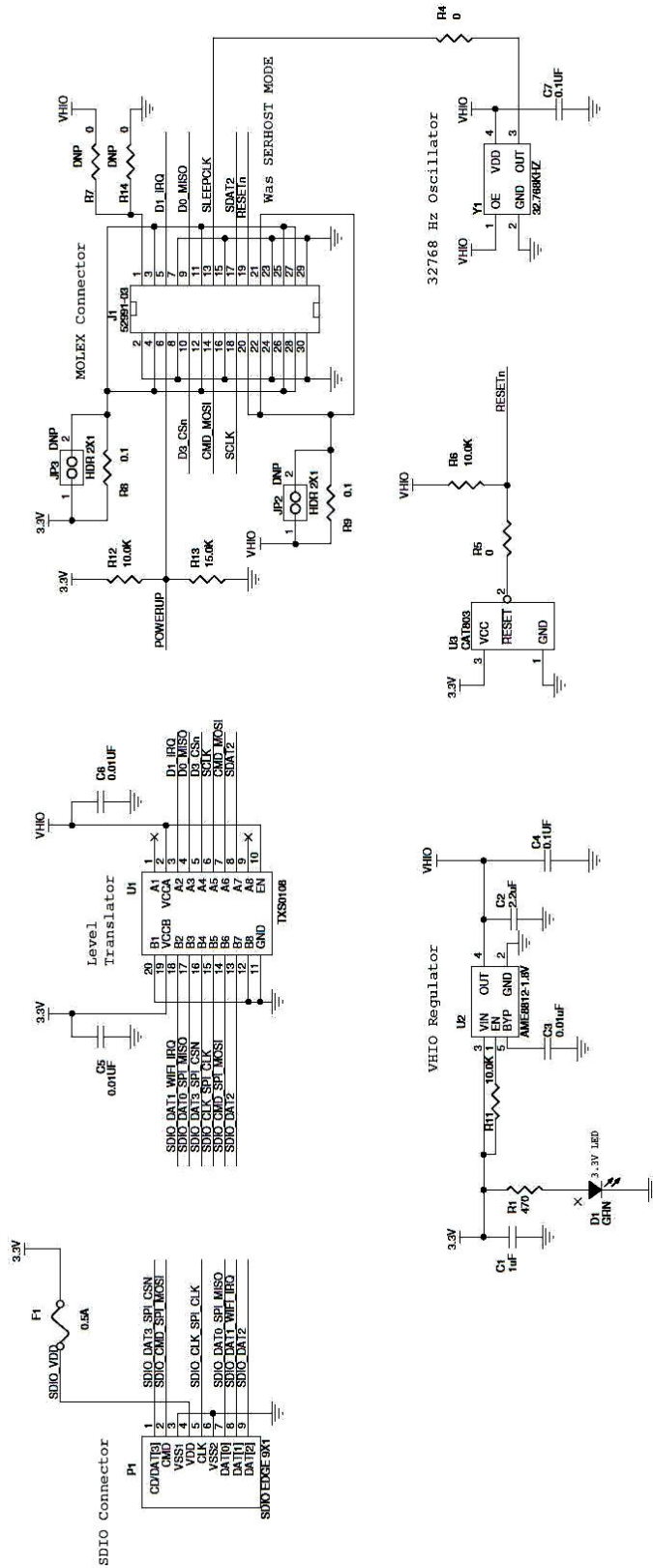| SIGNAL NAME	PIN NUMBER	DESCRIPTION	NOTES
DBG RXD	1	DBG RXD	Mapped to DBG_RXD Pin 15 on SG901-1091 Module. 1.8V UART Debug
RSTn	2	Reset	Mapped to RST Pin 2 input on SG901-1091 Module. A pull up of 100K is tied to the VHIO supply
DBG_TXD	3	DBG TXD	Mapped to DBG_TXD Pin 17 on SG901-1091 Module. 1.8V UART Debug
3.3V	10	SDIO 3.3V	Access to the 3.3V SDIO Supply
FEM_CTRL1	11	FEM CTRL	Optional FEM Control Access (For populated Front End Module FEM)
VHIO	12	VHIO Access	Access to the VHIO voltage regulator output
SLEEPCLK	17	Sleep Clock	Access to the Sleep Clock output from the 32768Hz Oscillator
POWERUP	20	Power Up WIFI	Mapped to POWERUP Pin 14 on SG901-1091 Module. This pin is normally high in the adapter board by an internal resistor divider to 3.3V. Use a low level input to disable the SG901-1091
GND	4,6,8,16,18	Ground Return	
NC	5,7,9,13,14,15,19	No Connect	

SDIO Host application

For SDIO applications simply insert the assembly into the SDIO socket available in most Host processor application/development boards. There are no external supplies or clocks required. The Kit is powered by the SDIO source in the Host development board.

SPI Host application (In development)

For SPI applications, the user is required to access the Bus using the SDIO connector in the adapter board. An external 3.3V power supply is required to power the evaluation kit assembly.

Carrier Board Schematic

U8 and C15
Not Populated

Adapter Board Schematic

Adapter Board Dimensions