

# S5D9 Bus Examples Summary

By

Michael Li  
(2/2/2018)

<https://www.miketechuniverse.com>

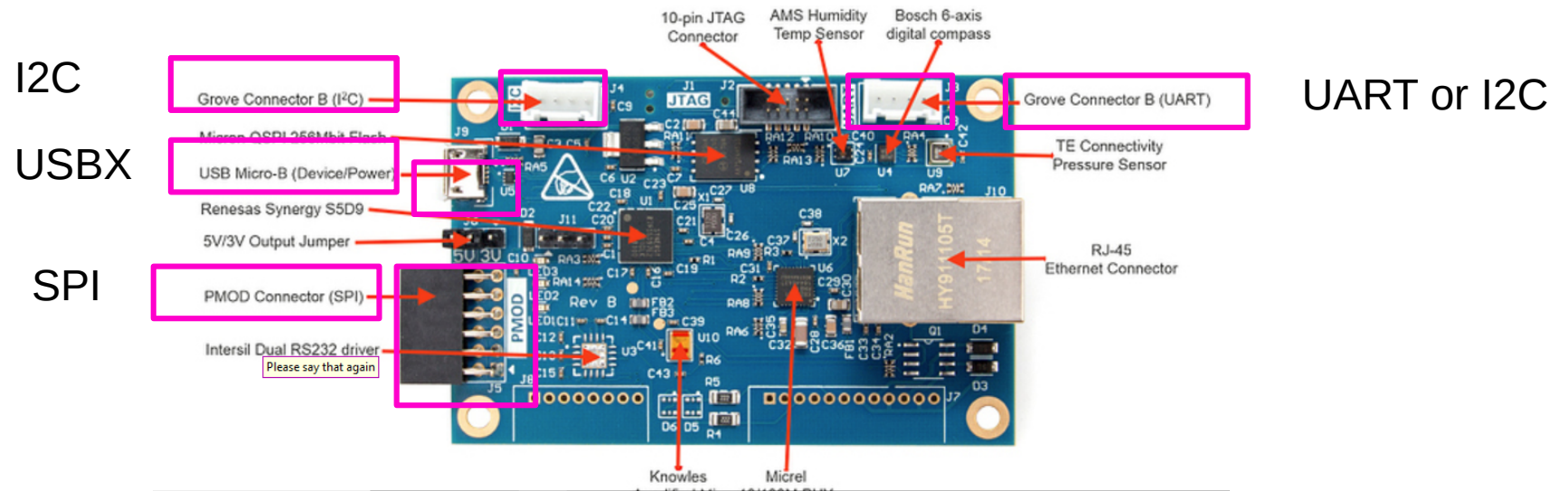
E2 Studio 5.4.0.023  
SSP 1.3.0

# Renesas S5D9 IOT Bus Tutorial by Michael C Li (2/2/2018)

<u>Bus</u>	<u>Port</u>	<u>Configuration</u>	<u>Comments</u>
USBX	USB J9	USB Framework	Use the PC USB and Term software for testing.
(Note1: USBX only supports Framework. So, ThreadX RTOC is required. )			
UART	Grove A J3 (P4_10/11)	UART sci0 Driver	Use the same Term software for testing.
UART	Grove A J3 (P4_10/11)	UART sci0 Framework	Use the same Term software for testing.
(Note1: Use USB-to-UART FDTI cable.)			
SPI	PMOD J5 (P2_2/3/4/5)	spi1 Framework	
SPI	PMOD J5 (P2_2/3/4/5)	sci9 Framework	
(Note1: Close the mode jumper J1 on the BMC 150 sensor board for the SPI mode)			
(Note2: Multiple bytes SPI read/write requires framework because SPI driver only supports single byte read/write, not workable for BMC 150 Sensor device.)			
I2C	Grove B J4 (P1_0/1)	iic1 Driver	
I2C	Grove B J4 (P1_0/1)	iic1 Framework	
I2C	Grove A J3 (P4_10/11)	sci0 Driver	Need to add two 4.7k pull up resistors for P4_10/11
I2C	Grove A J3 (P4_10/11)	sci0 Framework	Need to add two 4.7k pull up resistors for P4_10/11

(Note1: Open the mode jumper J1 on the BMC 150 sensor board for the I2C mode. Set standard speed, 100khz because BMC spec is only 400Khz max.)

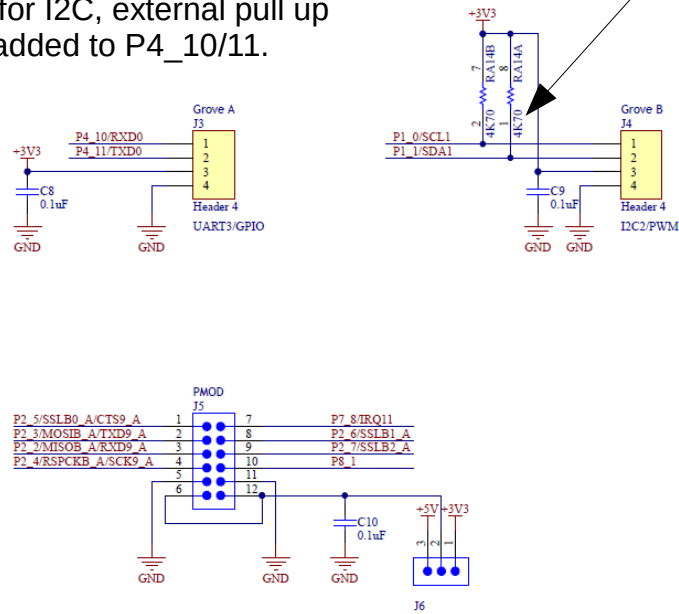
# Bus Port Location



# Schematic

If Grove A is used for I2C, external pull up resistors must be added to P4\_10/11.

Only Grove B has pull up resistors because it is intended to be used for I2C interface.



Title *Grove Connectors*

Size: *A*

Number:












Revision:

Date: *3/27/2017* Time: *10:15:44 AM* Sheet *1* of *1*

File: *D:\Work\SS Low Cost Module\Grove.SchDoc*

**Altium**

# Project Directories

 .metadata	1/3/2018 5:40 PM	File folder
 S5D9_BUS_LESSON1a_I2C_riic_driver	1/3/2018 5:41 PM	File folder
 S5D9_BUS_LESSON1b_I2C_sci_driver	1/3/2018 5:41 PM	File folder
 S5D9_BUS_LESSON1c_I2C_riic_framework	1/3/2018 5:41 PM	File folder
 S5D9_BUS_LESSON1d_I2C_sci_framework	1/3/2018 5:42 PM	File folder
 S5D9_BUS_LESSON2a_SPI_rspi_framwork	1/3/2018 5:42 PM	File folder
 S5D9_BUS_LESSON2b_SPI_sci_framework	1/3/2018 5:42 PM	File folder
 S5D9_BUS_LESSON3a_UART_driver	1/3/2018 5:42 PM	File folder
 S5D9_BUS_LESSON3b_UART_framework	1/3/2018 5:42 PM	File folder
 S5D9_BUS_LESSON4a_USBX	1/3/2018 5:43 PM	File folder
 S5D9_BUS_LESSON4b_USBX_sprintf_float	1/3/2018 5:43 PM	File folder

Driver = No RTOS is required.

Framework = ThreadX RTOS is required. USBX requires ThreadX RTOS

## Renesas Synergy Platform S5D9 IoT Fast Prototyping Kit (product page 2)

- Synergy S5D9 MCU with ARM CM4F @120MHz, 2M Flash and 640KB SDRAM
- External 256Mbits serial Nor QSPI flash for extra data and application storage
- Integrated acoustic, motion, pressure, temperature and humidity sensors
- 10/100Base-T Ethernet port for wireline connectivity to cloud
- USB 2.0 full speed as device and 5V power input
- Three colored LEDs (RED, GREEN, YELLOW)
- 10-pin JTAG connector for debug
- Two Grove expansion connectors (UART and I2C) for connectivity for additional sensors
- One PMOD expansion connector (SPI) for connectivity for additional peripherals

