S5D9 I2C Bus Example (IIC Framework Version)

By
Michael Li
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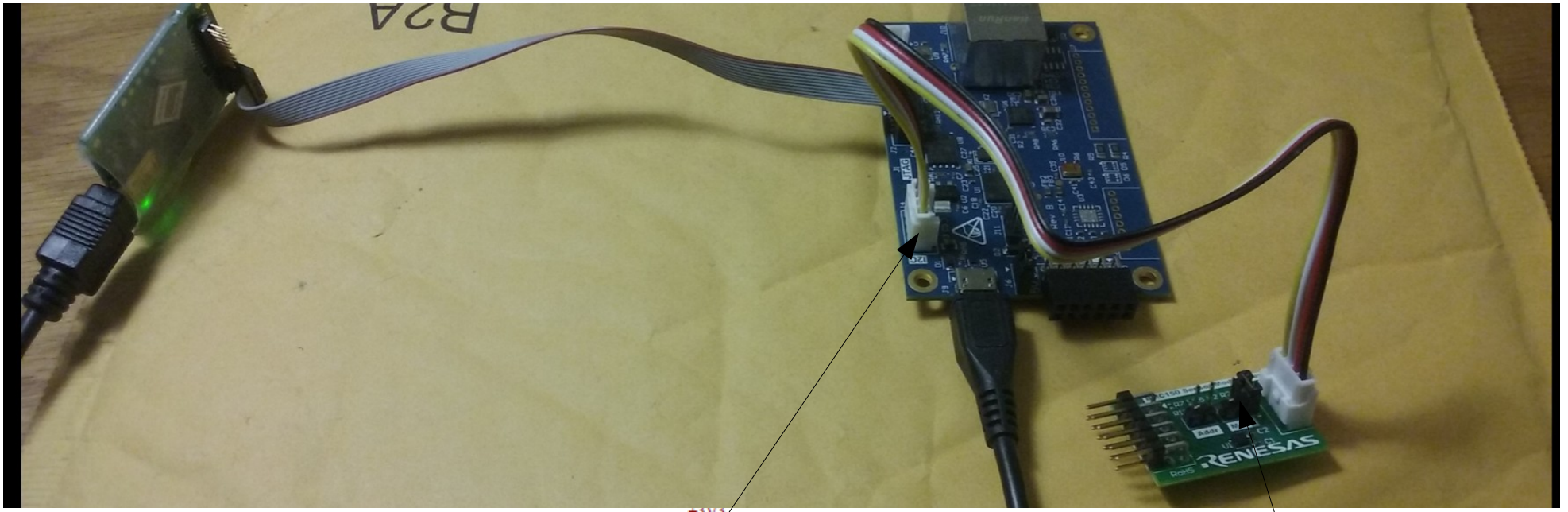
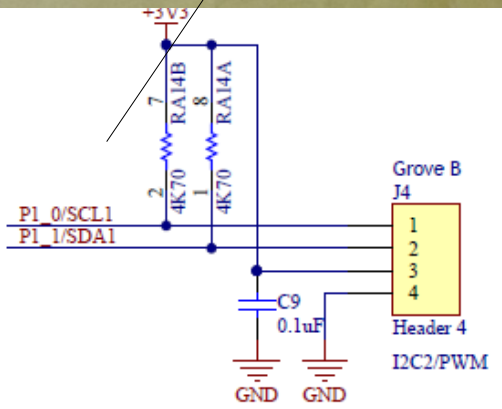
https://www.miketechuniverse.com

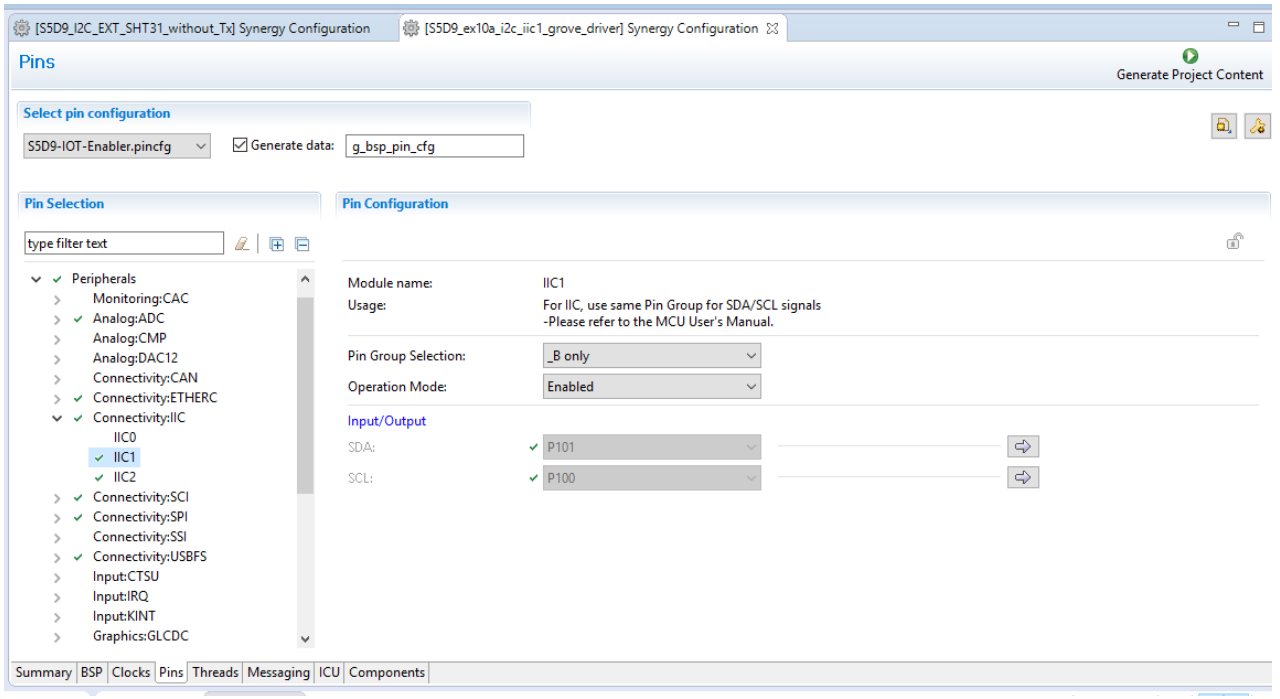
E2 Studio 5.4.0.023
SSP 1.3.0
ThreadX RTOC required



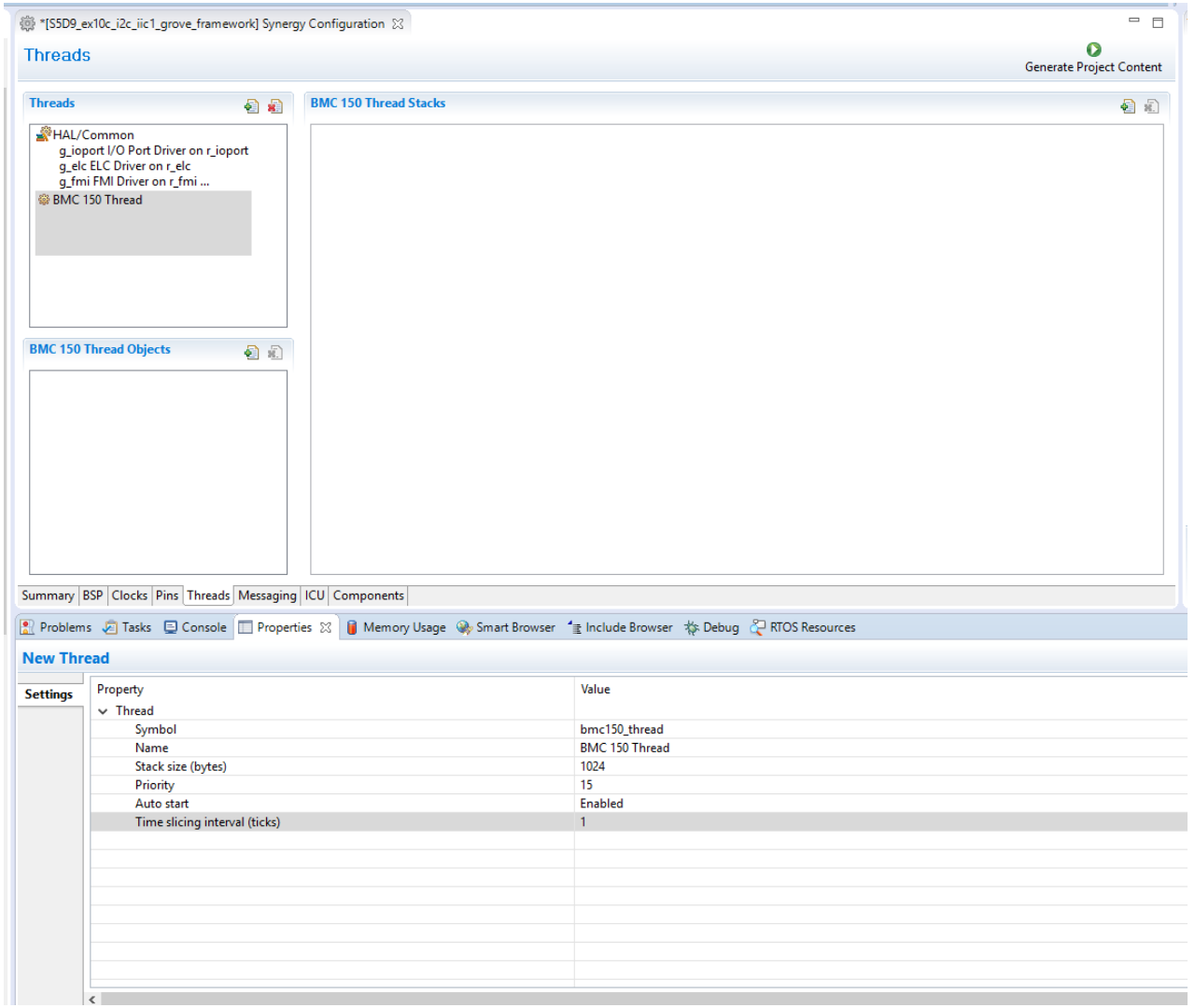


Open for the I2C mode

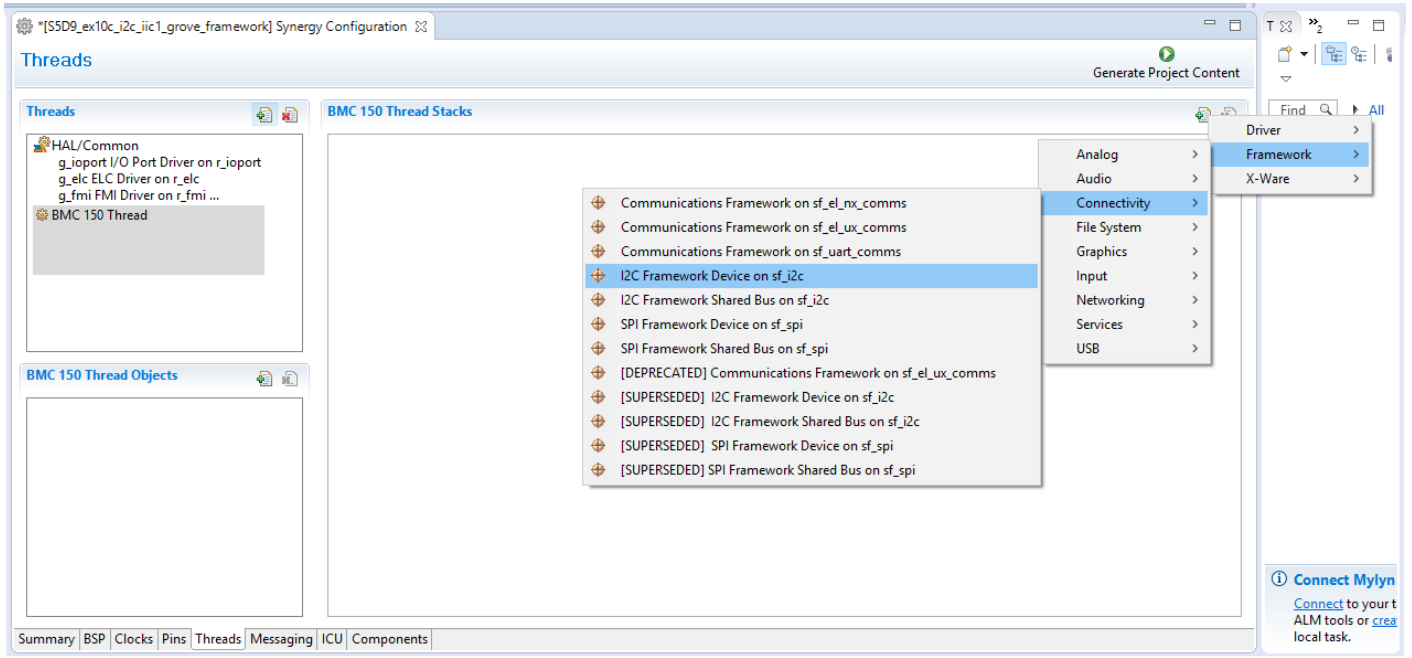
Pin Configuration



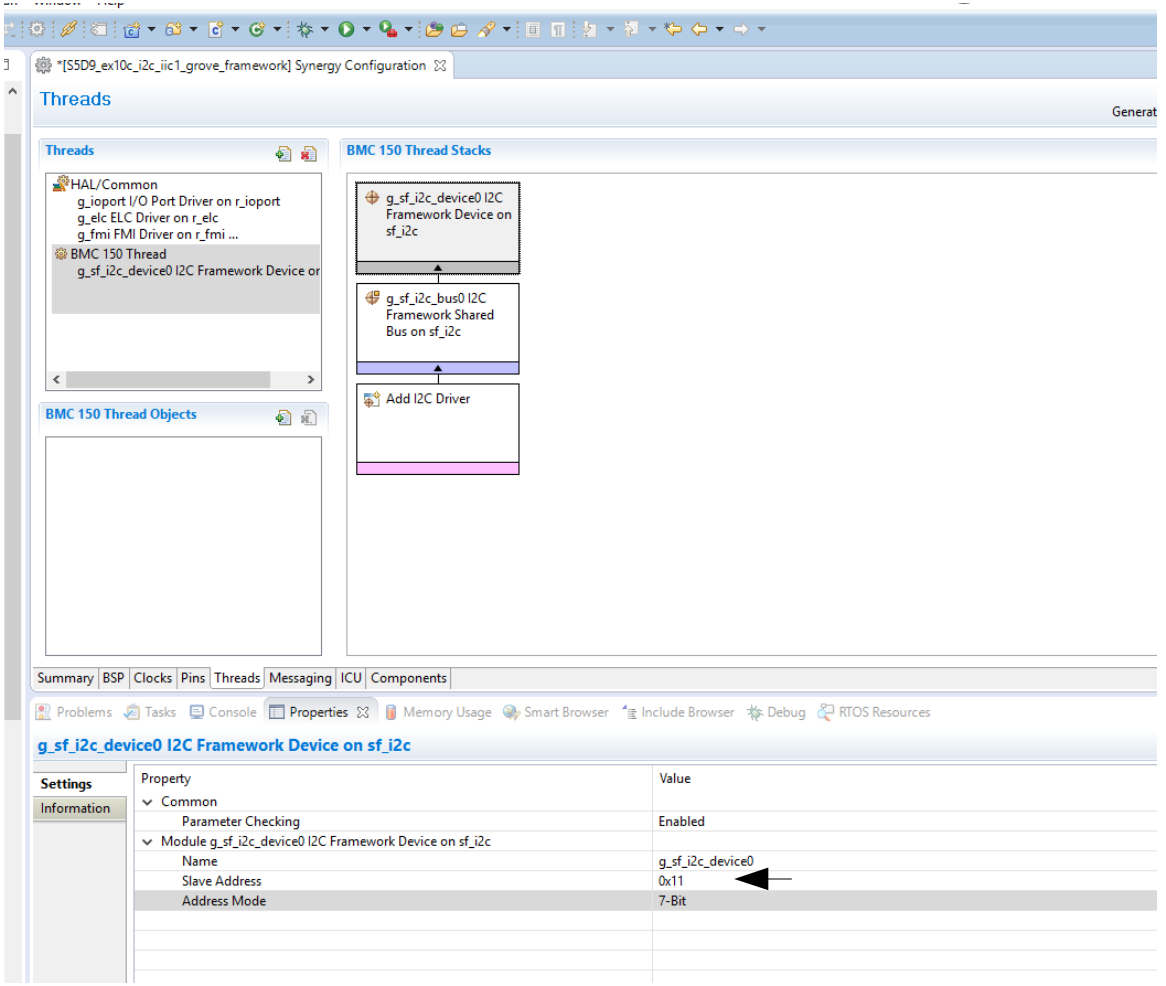
Create a new thread.



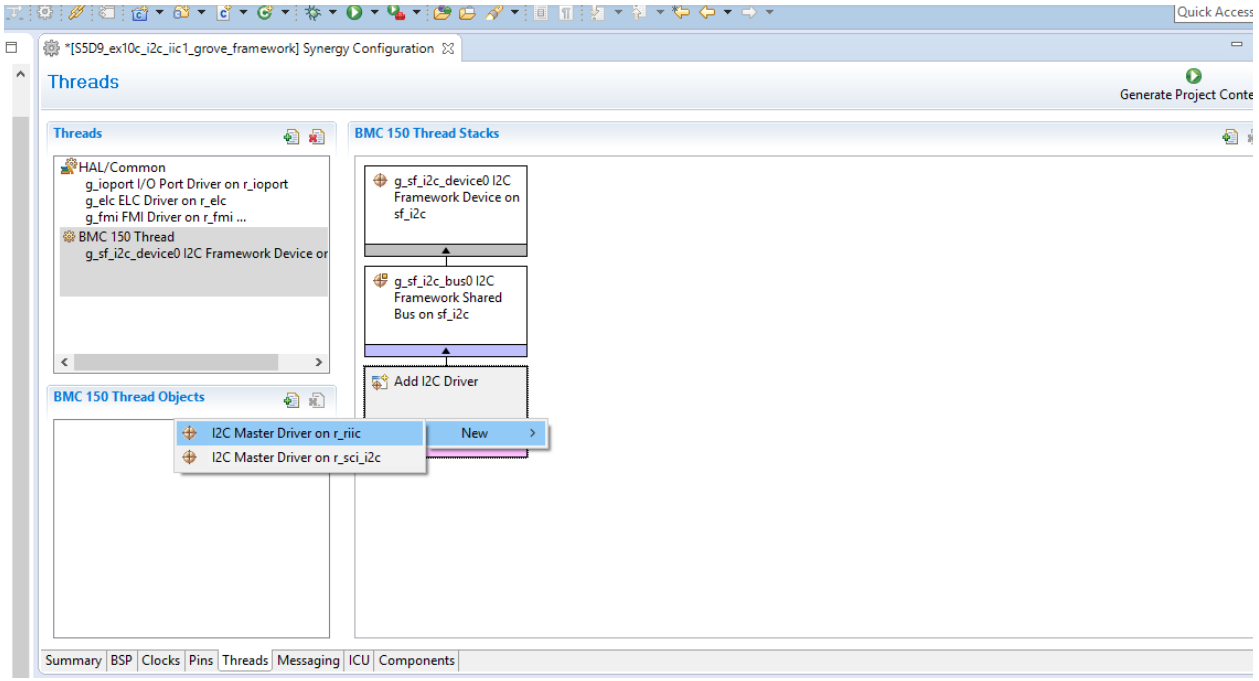
Add I2C Framework



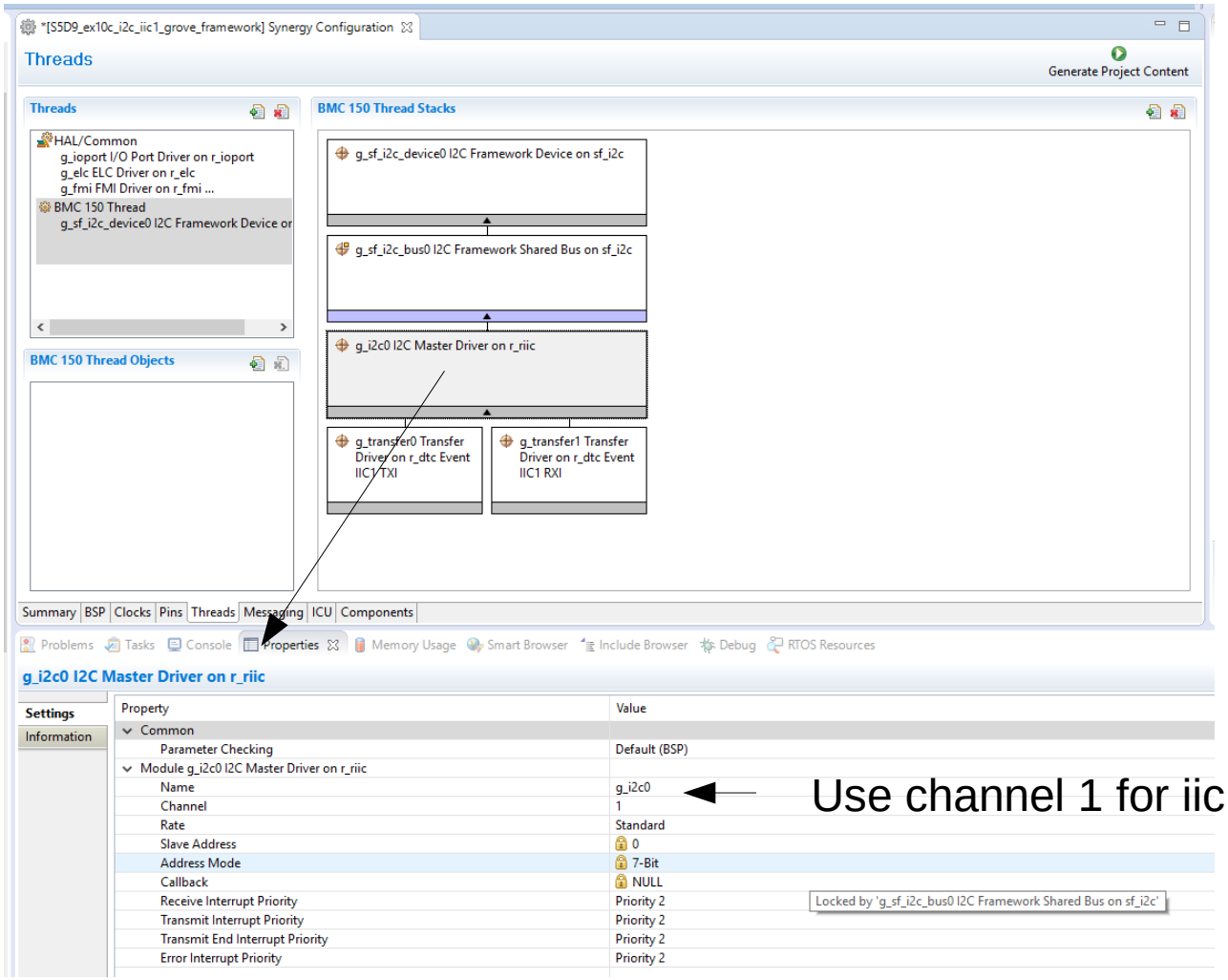
Change Properties



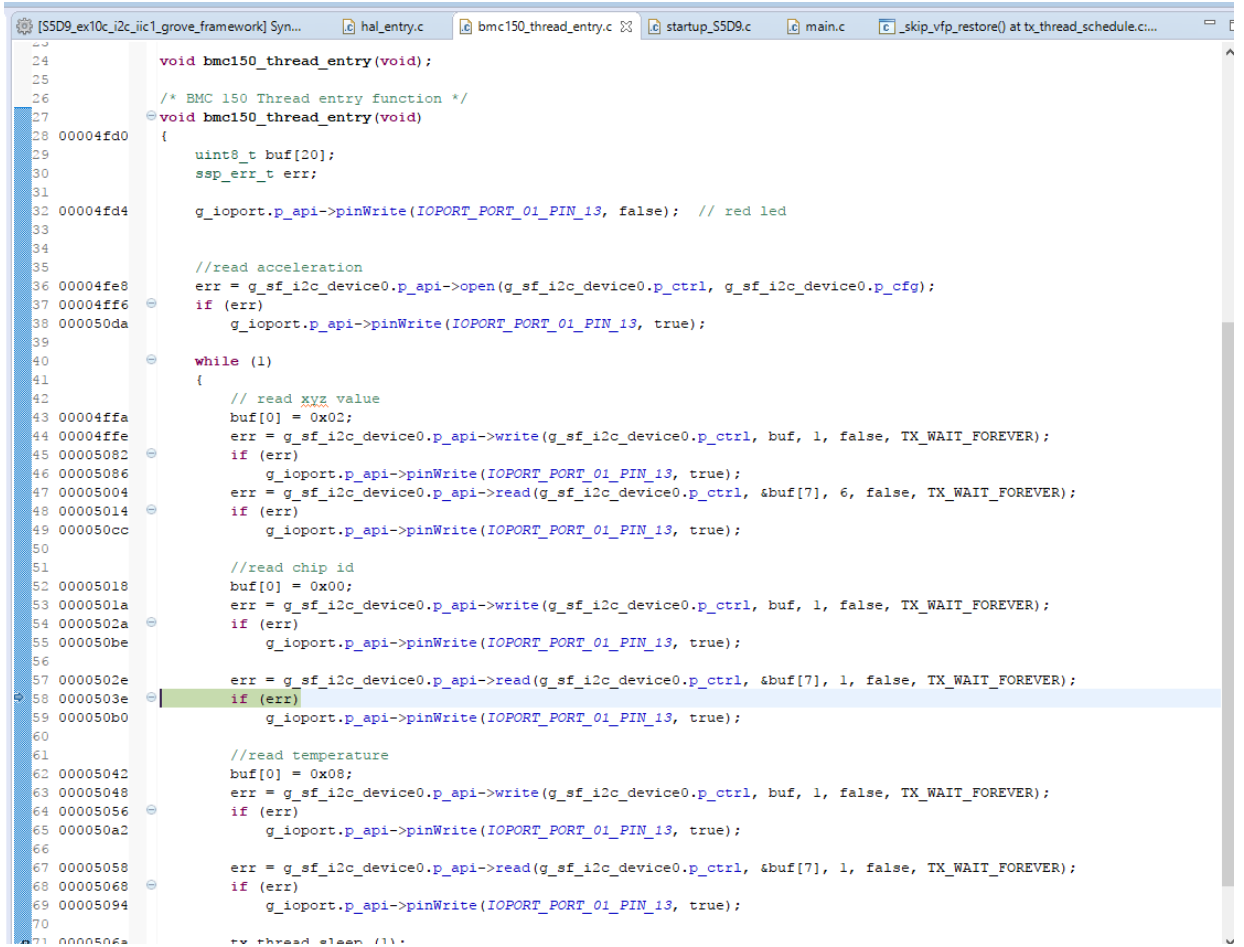
Add r_iic driver



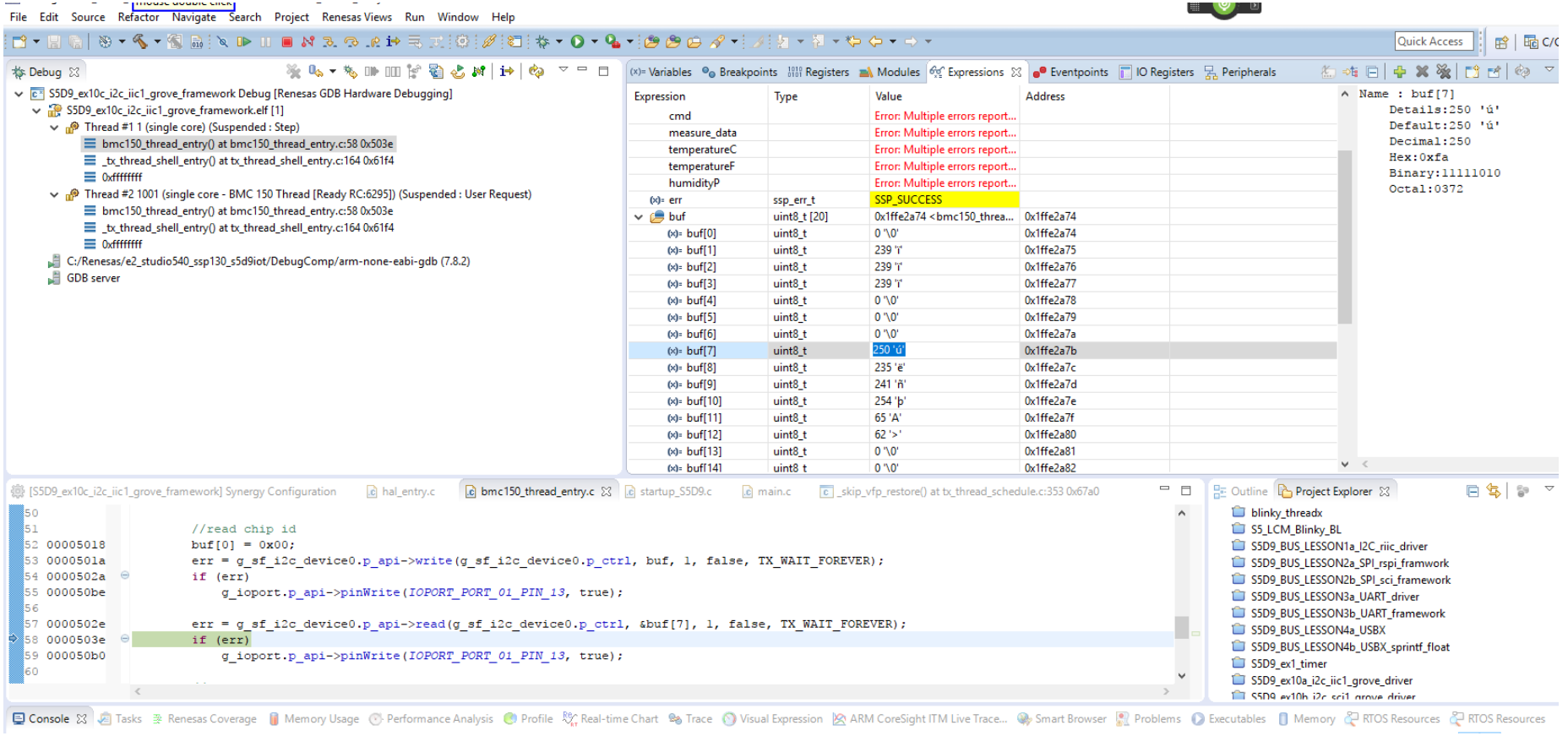
Change Properties



Main Code


[S5D9_ex10c_i2c_iic1_grove_framework] Syn...
hal_entry.c
bmc150_thread_entry.c
startup_S5D9.c
main.c
_skip_vfp_restore() at tx_thread_schedule.c:...
void bmc150_thread_entry(void);
/* BMC 150 Thread entry function */
void bmc150_thread_entry(void)
{
uint8_t buf[20];
ssp_err_t err;
g_ioport.p_api->pinWrite(IOPORT_PORT_01_PIN_13, false); // red led
//read acceleration
err = g_sf_i2c_device0.p_api->open(g_sf_i2c_device0.p_ctrl, g_sf_i2c_device0.p_cfg);
if (err)
g_ioport.p_api->pinWrite(IOPORT_PORT_01_PIN_13, true);
while (1)
{
// read xyz value
buf[0] = 0x02;
err = g_sf_i2c_device0.p_api->write(g_sf_i2c_device0.p_ctrl, buf, 1, false, TX_WAIT_FOREVER);
if (err)
g_ioport.p_api->pinWrite(IOPORT_PORT_01_PIN_13, true);
err = g_sf_i2c_device0.p_api->read(g_sf_i2c_device0.p_ctrl, &buf[7], 6, false, TX_WAIT_FOREVER);
if (err)
g_ioport.p_api->pinWrite(IOPORT_PORT_01_PIN_13, true);
//read chip id
buf[0] = 0x00;
err = g_sf_i2c_device0.p_api->write(g_sf_i2c_device0.p_ctrl, buf, 1, false, TX_WAIT_FOREVER);
if (err)
g_ioport.p_api->pinWrite(IOPORT_PORT_01_PIN_13, true);
err = g_sf_i2c_device0.p_api->read(g_sf_i2c_device0.p_ctrl, &buf[7], 1, false, TX_WAIT_FOREVER);
if (err)
g_ioport.p_api->pinWrite(IOPORT_PORT_01_PIN_13, true);
//read temperature
buf[0] = 0x08;
err = g_sf_i2c_device0.p_api->write(g_sf_i2c_device0.p_ctrl, buf, 1, false, TX_WAIT_FOREVER);
if (err)
g_ioport.p_api->pinWrite(IOPORT_PORT_01_PIN_13, true);
err = g_sf_i2c_device0.p_api->read(g_sf_i2c_device0.p_ctrl, &buf[7], 1, false, TX_WAIT_FOREVER);
if (err)
g_ioport.p_api->pinWrite(IOPORT_PORT_01_PIN_13, true);

Chip ID Read


File Edit Source Refactor Navigate Search Project Renesas Views Run Window Help
Quick Access
Debug
S5D9_ex10c_i2c_iic1_grove_framework Debug [Renesas GDB Hardware Debugging]
S5D9_ex10c_i2c_iic1_grove_framework.elf [1]
Thread #1 1 (single core) (Suspended : Step)
bmc150_thread_entry() at bmc150_thread_entry.c:58 0x503e
_tx_thread_shell_entry() at tx_thread_shell_entry.c:164 0x61f4
0xffffffff
Thread #2 1001 (single core - BMC 150 Thread [Ready RC:6295]) (Suspended : User Request)
bmc150_thread_entry() at bmc150_thread_entry.c:58 0x503e
_tx_thread_shell_entry() at tx_thread_shell_entry.c:164 0x61f4
0xffffffff
C:/Renesas/e2_studio540_ssp130_s5d9iot/DebugComp/arm-none-eabi-gdb (7.8.2)
GDB server
Variables Breakpoints Registers Modules Expressions Eventpoints IO Registers Peripherals
Expression Type Value Address
cmd Error: Multiple errors report...
measure_data Error: Multiple errors report...
temperatureC Error: Multiple errors report...
temperatureF Error: Multiple errors report...
humidityP Error: Multiple errors report...
err ssp_err_t SSP_SUCCESS
buf uint8_t [20] 0x1ffe2a74 <bmc150_threa... 0x1ffe2a74
buf[0] uint8_t 0 '\0' 0x1ffe2a74
buf[1] uint8_t 239 'ï' 0x1ffe2a75
buf[2] uint8_t 239 'ï' 0x1ffe2a76
buf[3] uint8_t 239 'ï' 0x1ffe2a77
buf[4] uint8_t 0 '\0' 0x1ffe2a78
buf[5] uint8_t 0 '\0' 0x1ffe2a79
buf[6] uint8_t 0 '\0' 0x1ffe2a7a
buf[7] uint8_t 250 'ú' 0x1ffe2a7b
buf[8] uint8_t 235 'ë' 0x1ffe2a7c
buf[9] uint8_t 241 'ñ' 0x1ffe2a7d
buf[10] uint8_t 254 'þ' 0x1ffe2a7e
buf[11] uint8_t 65 'A' 0x1ffe2a7f
buf[12] uint8_t 62 '>' 0x1ffe2a80
buf[13] uint8_t 0 '\0' 0x1ffe2a81
buf[14] uint8_t 0 '\0' 0x1ffe2a82
Name : buf[7]
Details:250 'ú'
Default:250 'ú'
Decimal:250
Hex:0xfa
Binary:11111010
Octal:0372
[S5D9_ex10c_i2c_iic1_grove_framework] Synergy Configuration
hal_entry.c
bmc150_thread_entry.c
startup_S5D9.c
main.c
_skip_vfp_restore() at tx_thread_schedule.c:353 0x67a0
50
51 //read chip id
52 00005018 buf[0] = 0x00;
53 0000501a err = g_sf_i2c_device0.p_api->write(g_sf_i2c_device0.p_ctrl, buf, 1, false, TX_WAIT_FOREVER);
54 0000502a if (err)
55 000050be g_ioport.p_api->pinWrite(IOPORT_PORT_01_PIN_13, true);
56
57 0000502e err = g_sf_i2c_device0.p_api->read(g_sf_i2c_device0.p_ctrl, &buf[7], 1, false, TX_WAIT_FOREVER);
58 0000503e if (err)
59 000050b0 g_ioport.p_api->pinWrite(IOPORT_PORT_01_PIN_13, true);
60
Outline
Project Explorer
blinky_threadx
S5_LCM_Blinky_BL
S5D9_BUS_LESSON1a_I2C_riic_driver
S5D9_BUS_LESSON2a_SPI_rspi_framwork
S5D9_BUS_LESSON2b_SPI_sci_framework
S5D9_BUS_LESSON3a_UART_driver
S5D9_BUS_LESSON3b_UART_framework
S5D9_BUS_LESSON4a_USBX
S5D9_BUS_LESSON4b_USBX_sprintf_float
S5D9_ex1_timer
S5D9_ex10a_i2c_iic1_grove_driver
Console
Tasks
Renesas Coverage
Memory Usage
Performance Analysis
Profile
Real-time Chart
Trace
Visual Expression
ARM CoreSight ITM Live Trace...
Smart Browser
Problems
Executables
Memory
RTOS Resources
RTOS Resources