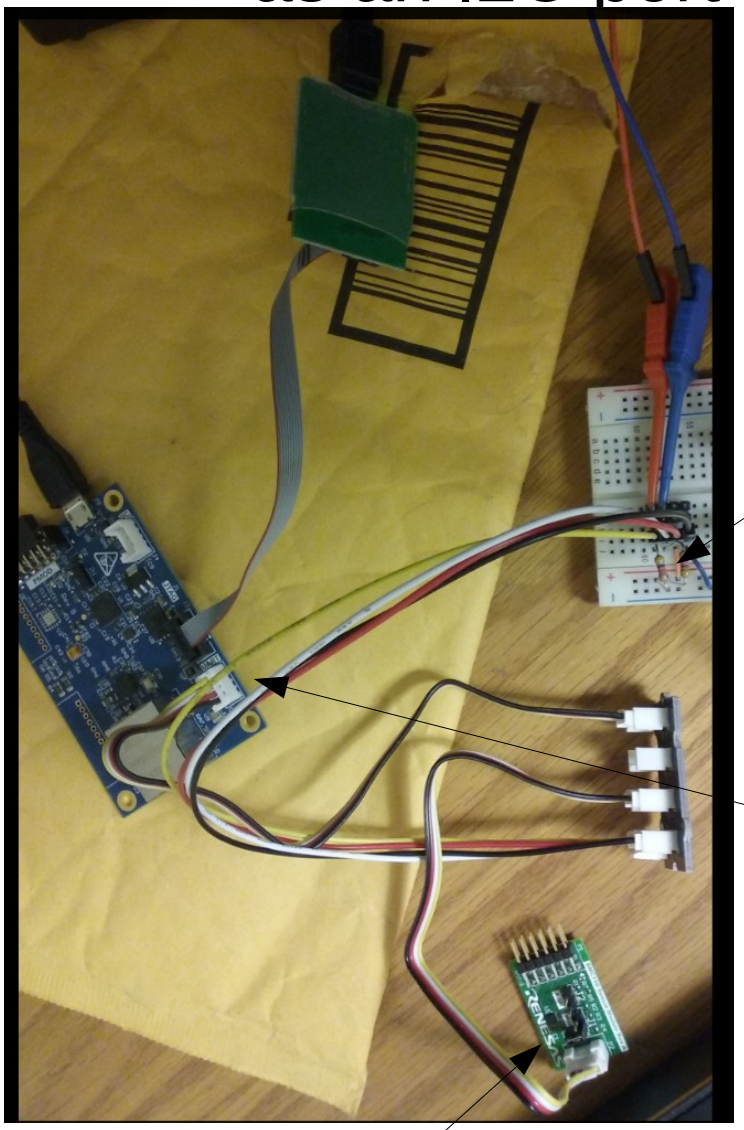
S5D9 I2C Bus Example
(SCI Driver Version)
By
Michael Li
(1/2/2008)
https://www.miketechuniverse.com

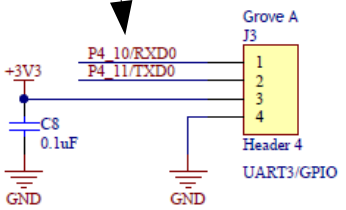
E2 Studio 5.4.0.023
SSP 1.3.0

Connect to the UART grove A since it can be configured as an I2C port by changing the SCI0 driver.



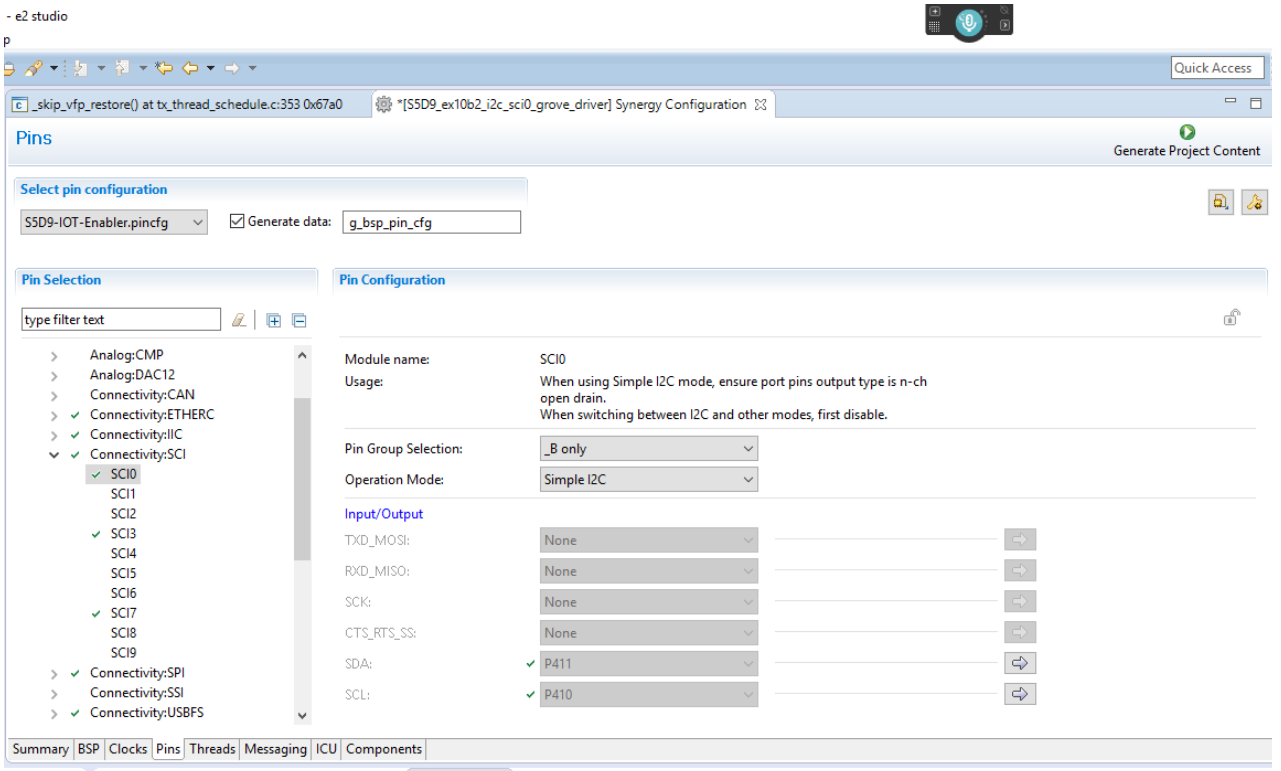
Note: No pullup resistors for P4_10/11. Need to add a pair of 4.7k ohm pull up resistors between SCL/SDA and VCC. (Extra components)

I2C hub (used to add the pull up resistors!)

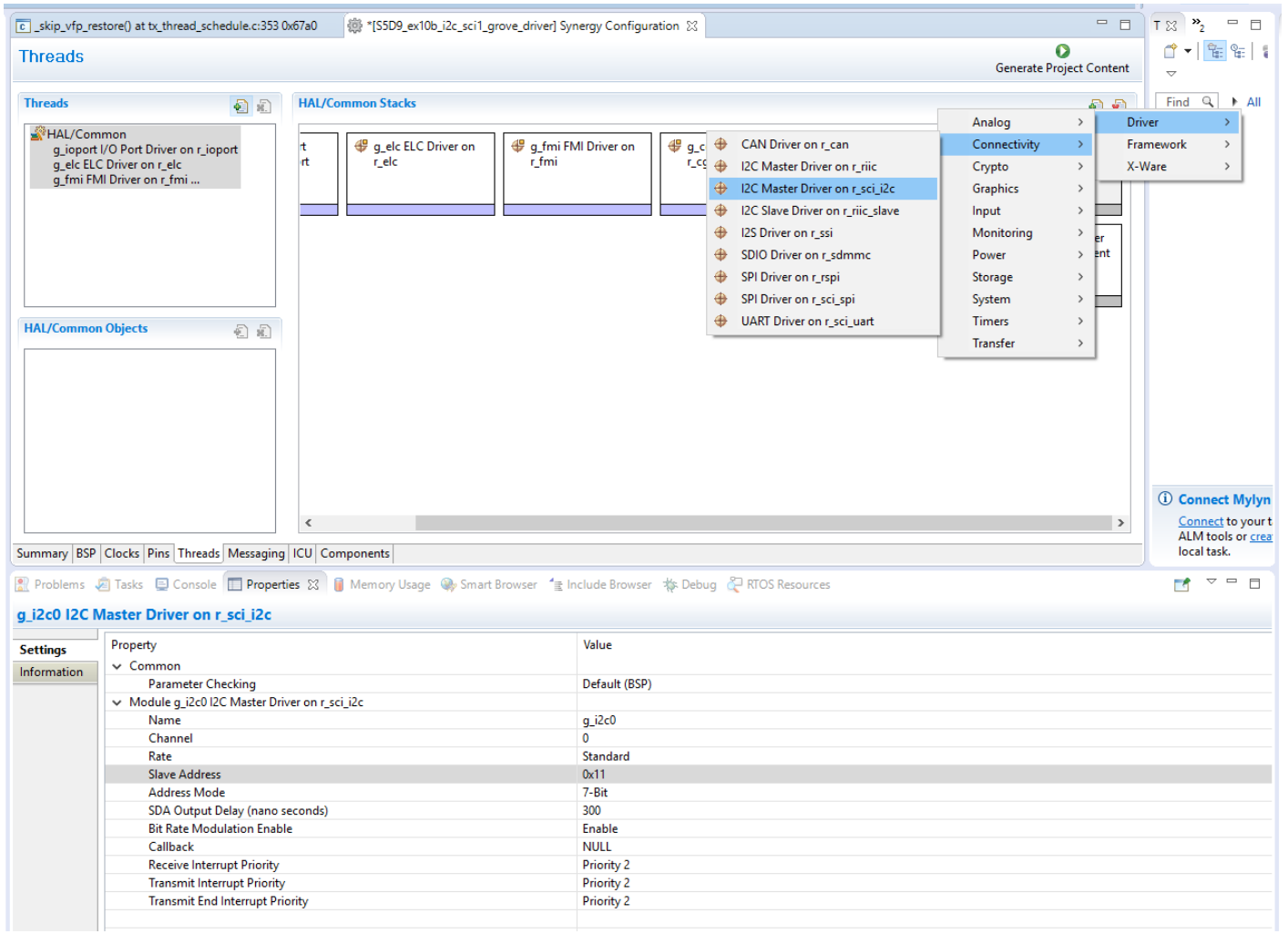


Open for the I2C mode

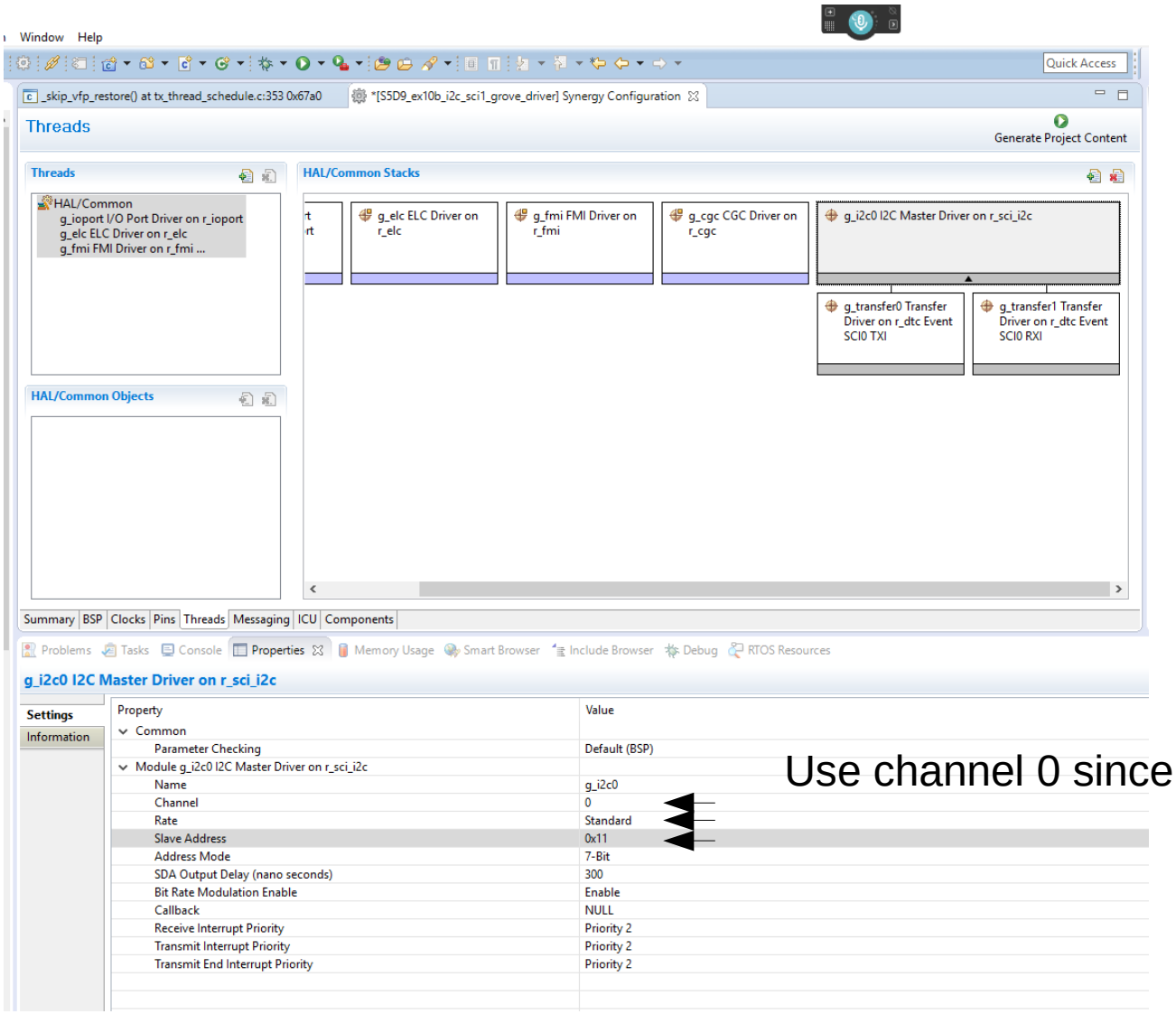
Change the SCI0 module from UART to I2C



Add the SCI driver

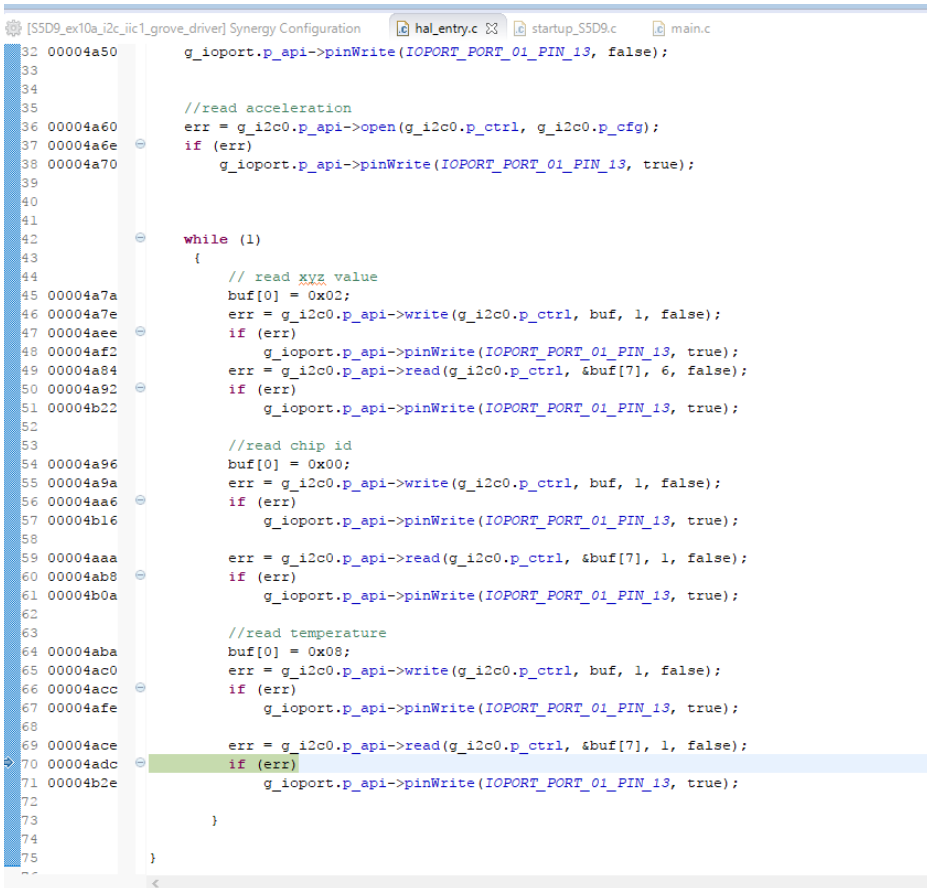


Change Properties



Use channel 0 since SCI0 is used.

Main Code




```
00004a50     g_ioport.p_api->pinWrite(IOPORT_PORT_01_PIN_13, false);


             //read acceleration
00004a60     err = g_i2c0.p_api->open(g_i2c0.p_ctrl, g_i2c0.p_cfg);
00004a6e     if (err)
00004a70         g_ioport.p_api->pinWrite(IOPORT_PORT_01_PIN_13, true);



             while (1)
              {
                  // read xyz value
00004a7a          buf[0] = 0x02;
00004a7e          err = g_i2c0.p_api->write(g_i2c0.p_ctrl, buf, 1, false);
00004aee          if (err)
00004af2              g_ioport.p_api->pinWrite(IOPORT_PORT_01_PIN_13, true);
00004a84          err = g_i2c0.p_api->read(g_i2c0.p_ctrl, &buf[7], 6, false);
00004a92          if (err)
00004b22              g_ioport.p_api->pinWrite(IOPORT_PORT_01_PIN_13, true);

                  //read chip id
00004a96          buf[0] = 0x00;
00004a9a          err = g_i2c0.p_api->write(g_i2c0.p_ctrl, buf, 1, false);
00004aa6          if (err)
00004b16              g_ioport.p_api->pinWrite(IOPORT_PORT_01_PIN_13, true);

00004aaa          err = g_i2c0.p_api->read(g_i2c0.p_ctrl, &buf[7], 1, false);
00004ab8          if (err)
00004b0a              g_ioport.p_api->pinWrite(IOPORT_PORT_01_PIN_13, true);

                  //read temperature
00004aba          buf[0] = 0x08;
00004ac0          err = g_i2c0.p_api->write(g_i2c0.p_ctrl, buf, 1, false);
00004acc          if (err)
00004afe              g_ioport.p_api->pinWrite(IOPORT_PORT_01_PIN_13, true);

00004ace          err = g_i2c0.p_api->read(g_i2c0.p_ctrl, &buf[7], 1, false);
00004adc          if (err)
00004b2e              g_ioport.p_api->pinWrite(IOPORT_PORT_01_PIN_13, true);

             }

         }
```

With the pullup resistors, SDA/SCL signals are correct. Read operation is successful.