

Purpose : Determine why the RTOS
version of the GPIO example is hard
to build

By Michael Li
03/28/2018

Demo Project Setting

(GPIO examples will follow this setting.)

The screenshot displays the Renesas Synergy IDE interface. The top menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Renesas Views, Run, Window, and Help. The left sidebar shows the Project Explorer with a tree view of the project structure, including folders like Crypto_API, GUI_APP_ML, GUIApp, and various PMOD1_GPIO_output_v* directories. The main workspace is divided into two panes. The top pane, titled 'Summary', displays the 'S7 Series High Performance' branding and a brief description: 'The S7 Series of Renesas Synergy™ Microcontrollers sets a new standard in performance, connectivity'. The bottom pane, titled 'Project Summary', provides detailed project information:

Project Summary	
Board:	gw002_rev1_3
Device:	R7FS7G27H2A01CBD
Toolchain:	GCC ARM Embedded
Toolchain Version:	4.9.3.20150529
SSP Version:	1.2.0
Selected software components:	
Board support package for R7FS7G27H2A01CBD	v1.2.0
Board support package for S7G2	v1.2.0
Board support package for S7G2	v1.2.0
SSP Common Code	v1.2.0
Clock Generation Circuit: Provides=[CGC]	v1.2.0

Below the project summary, there are links to YouTube and the Renesas Synergy Gallery. The bottom status bar shows the current project is 'Synergy' and includes tabs for Problems, Tasks, Console, Properties, Memory Usage, Smart Browser, and Memory.

HAL

e2 studio - Project Configuration (Synergy C Project)

e2 studio - Project Configuration (Synergy C Project)

Select the board support that you require.

Device Selection

SSP version: 1.2.0

Board: gw002_rev1_3

Device: R7F57G27H2A01CBD

Select Tools

Toolchain: GCC ARM Embedded

Toolchain version: 4.9.3.20150529

Debugger: J-Link ARM

Available Tools

- ✓ GCC ARM Embedded
4.9.3.20150529
- ✓ Debuggers
J-Link ARM
- ✓ RTOS
Express Logic ThreadX
- ✓ Smart Manual
IO Registers Supported
Software Manual Supported

< Back Next > Finish Cancel

Synergy Configuration - gw002_project_gpio_hal_v1/configuration.xml - e2 studio

File Edit Navigate Search Project Renesas Views Run Window Help

Project Explorer

- gw002_example1_gpio_output_pmod1_hal_v1c
- gw002_example1_gpio_output_pmod1_hal_v1d
- gw002_example1_gpio_output_pmod1_hal_v1e
- gw002_example1_gpio_output_pmod1_hal_v2
- gw002_example1_gpio_output_pmod1_hal_v2a
- gw002_example1_gpio_output_pmod1_hal_v2b
- gw002_example1_gpio_output_pmod1_hal_v2c
- gw002_example1_gpio_output_pmod1_hal_v2d
- gw002_example1_gpio_output_pmod1_hal_v2e
- gw002_example1_gpio_output_pmod1_hal_v2e_copy
- gw002_example1_gpio_output_pmod1_rtos
- gw002_example1_gpio_output_pmod1_rtos_v0
- gw002_example1_gpio_output_pmod1_rtos_v0a
- gw002_example1_gpio_output_pmod1_rtos_v1
- gw002_example1_gpio_output_pmod1_rtos_v1a
- gw002_example1_gpio_output_pmod1_rtos_v2a
- gw002_example1_gpio_output_pmod1_rtos_v3a
- gw002_example1_gpio_output_pmod1_rtos_v3b
- gw002_example1_gpio_output_pmod1_rtos_v3c
- gw002_example1_gpio_output_pmod1_rtos_v4a
- gw002_example2_gpio_input_pmod1_hal
- gw002_example2_gpio_input_pmod1_rtos
- gw002_example3_i2c_sci7_ads1015_pmod1_hal
- gw002_example3_i2c_sci7_ads1015_pmod1_rtos
- gw002_example3_spi_bmc150_pmod1_rtos
- gw002_example4_uart_pc_pmod1_hal
- gw002_example4_uart_pc_pmod1_rtos
- gw002_lesson1_gpio_output_pmod1_hal
- gw002_lesson1_gpio_output_pmod1_hal_v2
- gw002_lesson2_gpio_input_pmod1_hal_v1
- gw002_lesson3_i2c_sci7_ads1015_pmod1_hal_v1
- gw002_lesson5_uart_pmod1_hal_v1
- gw002_project_gpio_hal_v1
 - Includes

Properties Problems

Properties are not available.

Summary

Time to Market Cost of Ownership Barriers to Entry Platform Support

S7 Series

Project Summary

Board: gw002_rev1_3
Device: R7FS7G27H2A01CBD
Toolchain: GCC ARM Embedded
Toolchain Version: 4.9.3.20150529
SSP Version: 1.2.0

Selected software components: v1.2.0

YouTube Renesas Synergy Gallery

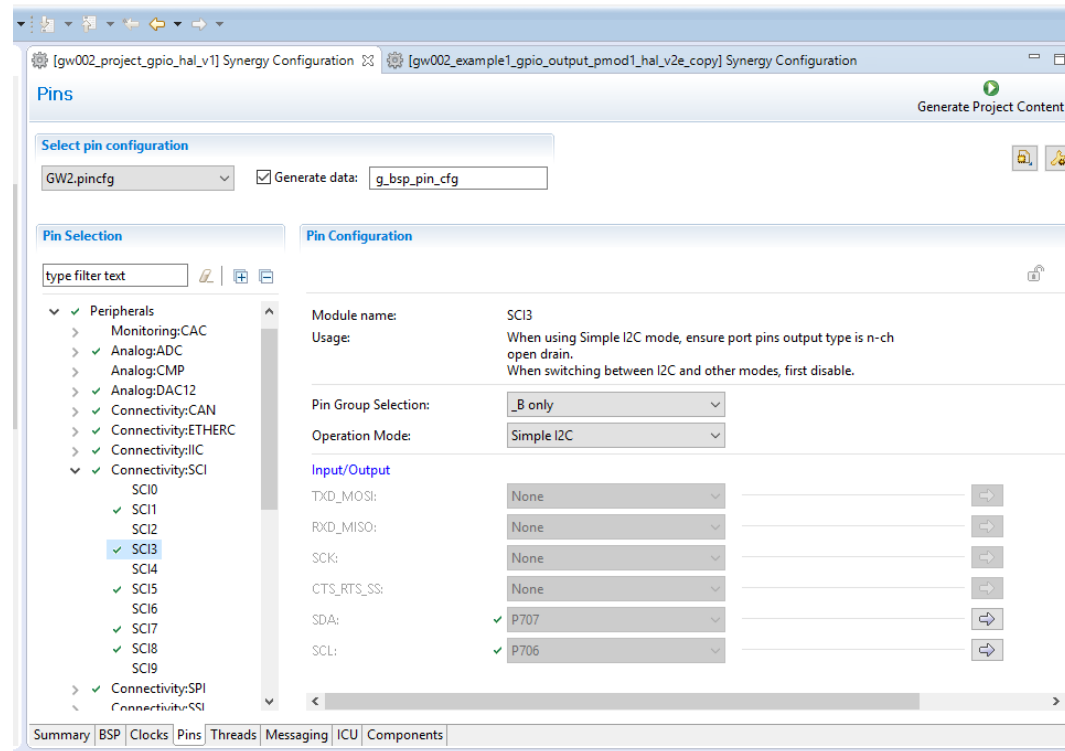
About e2 studio

e2 studio
Version: 5.3.1.002
Parts Copyright (C) 2010-2016 Renesas Electronics Corp.
All rights reserved.

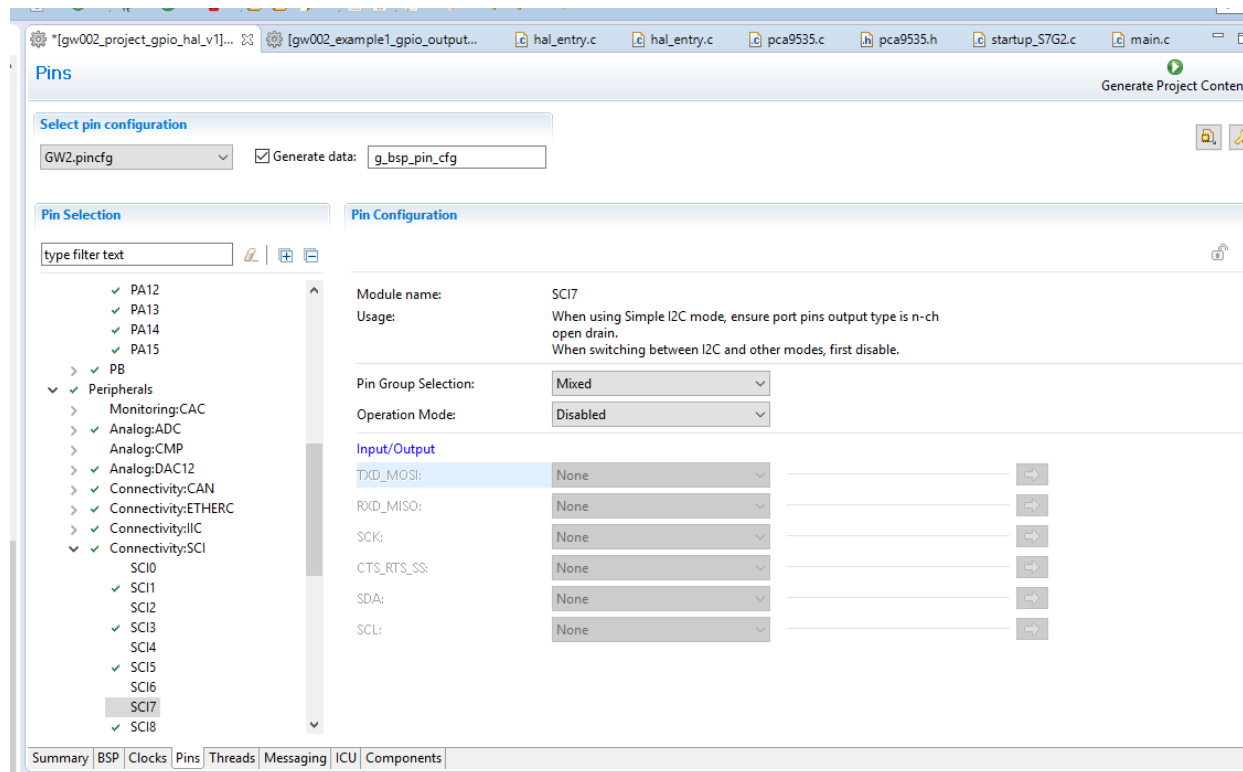
e2 studio IDE is an extension of software developed for
eclipse.org.

Installation Details OK

Pin Configuration



Disable SCI7



PMOD1: PA05/4/3/2, P400 GPIO Output Mode

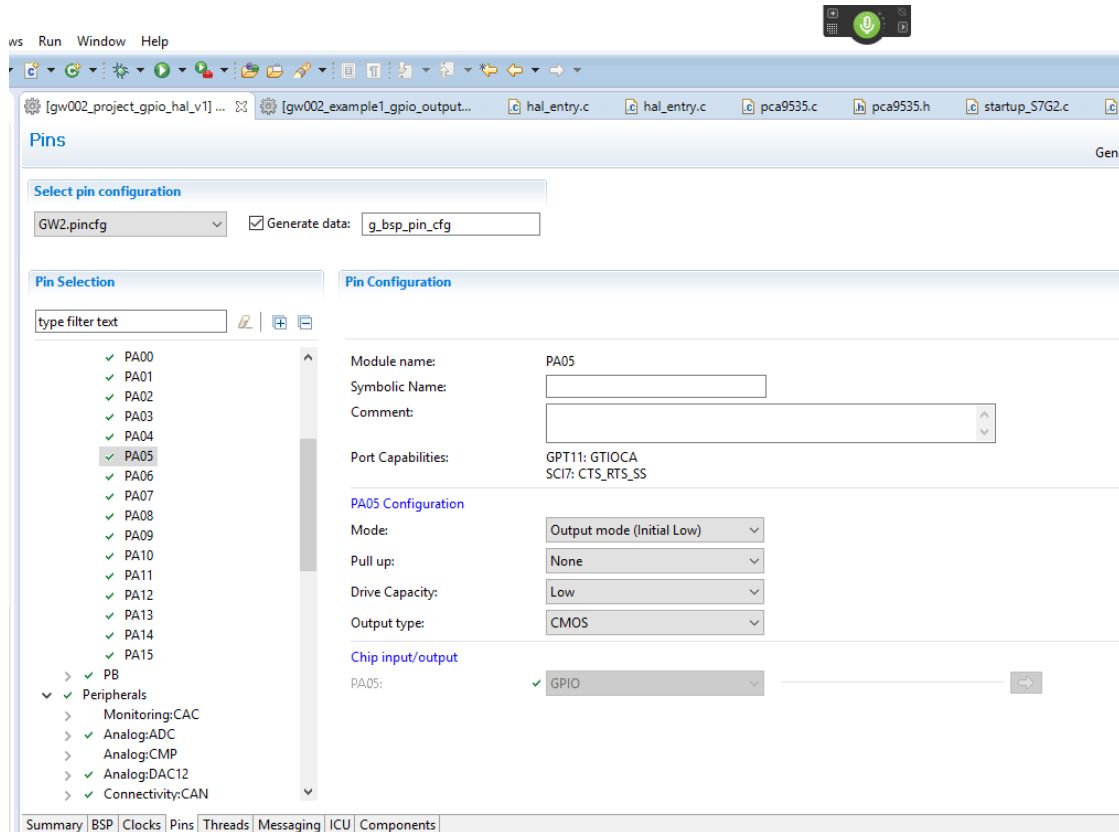


Table 6 – Pmod1 UART1 Type 4A and SPI Type 2A Pin Connections

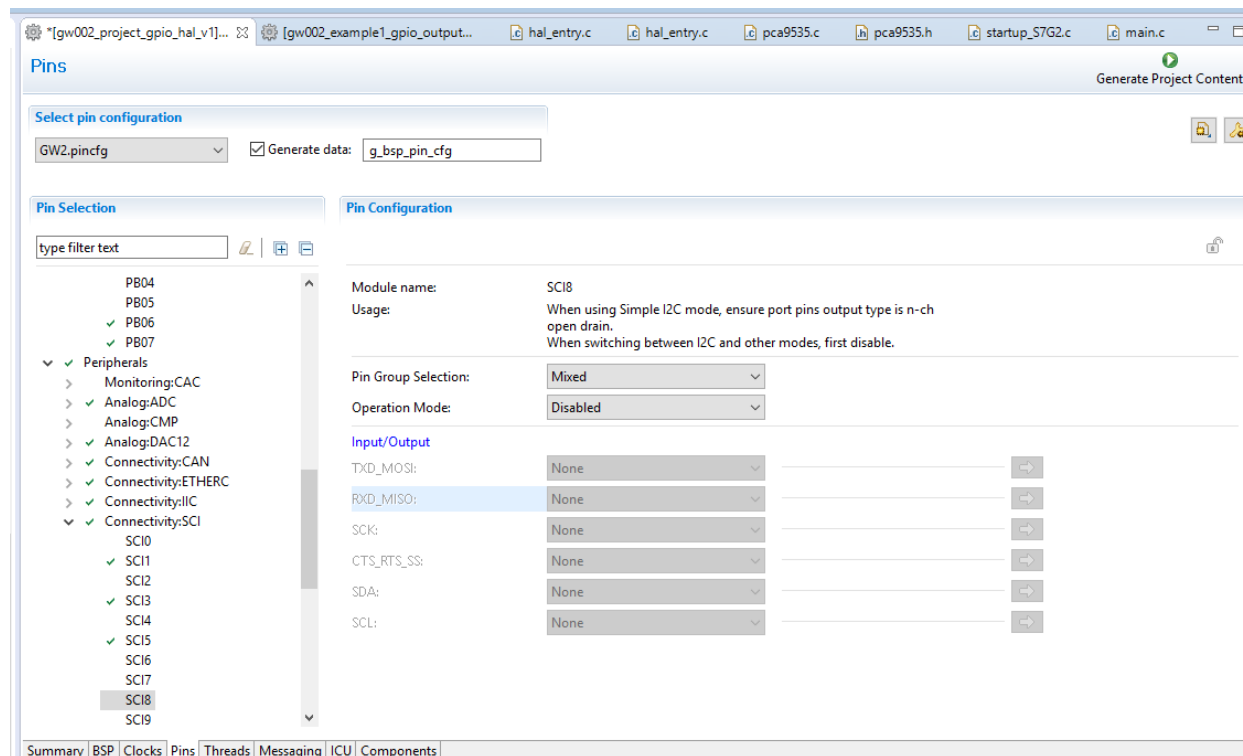
GPIO Type 1 Pmods

If clearance is not an issue, two GPIO Type 1 standard Pmods can be used together when the connector is configured in UART/SPI Comms Mode. **Do not turn a second Type 1 Pmod upside down to get it to fit! Damage may occur as a result of inserting a Pmod upside down!**

	Pmod		S7G2	
	Pin	Pin Function	Port Pin	Pin Function
Upper Row	1	GPIO	PA05	GPIO
	2	GPIO	PA02	GPIO
	3	GPIO	PA03	GPIO
	4	GPIO	PA04	GPIO
	5	GND	GND	GND
	6	VCC (3.3V)	VCC (3.3V)	VCC (3.3V)
Lower Row	1	GPIO	P400	GPIO
	2	GPIO	I/O Expander	GPIO
	3	GPIO	I/O Expander	GPIO
	4	GPIO	I/O Expander	GPIO
	5	GND	GND	GND
	6	VCC (3.3V)	VCC (3.3V)	VCC (3.3V)

Table 7 – Pmod1 GPIO Type 1 Pin Connections (UART/SPI Mode)

Disable SCI8



P001 : GPIO Input Mode (Output Mode is not available)

gw002_project_gpio_hal_v1... gw002_example1_gpio_output... hal_entry.c hal_entry.c pca9535.c pca9535.c

Pins

Select pin configuration

GW2.pincfg ☒ Generate data: g_bsp_pin_cfg

Pin Selection

type filter text

- ✓ PB01
- ✓ PB02
- ✓ PB03
- ✓ PB04
- ✓ PB05
- ✓ PB06
- ✓ PB07
- ✓ Peripherals
 - > Monitoring:CAC
 - > Analog:ADC
 - > Analog:COMP
 - > Analog:DAC12
 - > ✓ Connectivity:CAN
 - > ✓ Connectivity:ETHERC
 - > ✓ Connectivity:ILC
 - > ✓ Connectivity:SCI
 - SCI0

Pin Configuration

Module name: PB05

Symbolic Name:

Comment:

Port Capabilities: ETHERC1: ERXD3
IRQ0: IRQ13
SCI8: RXD_MISO
SCI8: SCL

PB05 Configuration

Mode: Output mode (Initial Low)

Pull up: None

IRQ: None

Drive Capacity: Low

Output type: CMOS

Generate

Select pin configuration

GW2.pincfg ☒ Generate data: g_bsp_pin_cfg

Pin Selection

type filter text

- ✓ Ports
 - ✓ P0
 - ✓ P000
 - ✓ P001
 - ✓ P002
 - ✓ P003
 - ✓ P004
 - ✓ P005
 - ✓ P006
 - ✓ P007
 - ✓ P008
 - ✓ P009
 - ✓ P010
 - ✓ P011
 - ✓ P014
 - ✓ P015
 - > ✓ P1
 - > ✓ P2
 - > ✓ P3
 - > ✓ P4

Pin Configuration

Module name: P001

Symbolic Name: PMOD2_INT

Comment:

Port Capabilities: ADC0: AN01
CMP0: IVCMP2
IRQ0: IRQ07

P001 Configuration

Mode: Input mode

IRQ: Disabled

Input mode

Chip input/output

P001: ☒ GPIO

Table 13 – Pmod2 UART1 Type 4A and SPI Type 2A Pin Connections

GPIO Type 1 Pmods

If clearance is not an issue, two GPIO Type 1 standard Pmods can be used together when the connector is configured in UART/SPI Comms Mode. **Do not turn a second Type 1 Pmod upside down to get it to fit! Damage may occur as a result of inserting a Pmod upside down!**

	Pmod		S7G2	
	Pin	Pin Function	Port Pin	Pin Function
Upper Row	1	GPIO	PB02	GPIO
	2	GPIO	PB04	GPIO
	3	GPIO	PB05	GPIO
	4	GPIO	PB03	GPIO
	5	GND	GND	GND
	6	VCC (3.3V)	VCC (3.3V)	VCC (3.3V)
Lower Row	1	GPIO	P001	GPIO
	2	GPIO	I/O Expander	GPIO
	3	GPIO	I/O Expander	GPIO
	4	GPIO	I/O Expander	GPIO
	5	GND	GND	GND
	6	VCC (3.3V)	VCC (3.3V)	VCC (3.3V)

Table 14 – Pmod2 GPIO Type 1 Pin Connections (SPI/UART Mode)

Please say that again on - gw002_project_gpio_hal_v1/configuration.xml - e2 studio
File Edit Navigate Search Project Renesas Views Run Window Help

Project Explorer

- archive_gw002_example1_gpio_output_pmod1_hal_v1
- gw002_example1_gpio_output_pmod1_hal
- gw002_example1_gpio_output_pmod1_hal_v1
- gw002_example1_gpio_output_pmod1_hal_v1a
- gw002_example1_gpio_output_pmod1_hal_v1b
- gw002_example1_gpio_output_pmod1_hal_v1c
- gw002_example1_gpio_output_pmod1_hal_v1d
- gw002_example1_gpio_output_pmod1_hal_v1e
- gw002_example1_gpio_output_pmod1_hal_v2
- gw002_example1_gpio_output_pmod1_hal_v2a
- gw002_example1_gpio_output_pmod1_hal_v2b
- gw002_example1_gpio_output_pmod1_hal_v2c
- gw002_example1_gpio_output_pmod1_hal_v2d
- gw002_example1_gpio_output_pmod1_hal_v2e
- gw002_example1_gpio_output_pmod1_hal_v2e_copy
- gw002_example1_gpio_output_pmod1_rtos
- gw002_example1_gpio_output_pmod1_rtos_v0
- gw002_example1_gpio_output_pmod1_rtos_v0a
- gw002_example1_gpio_output_pmod1_rtos_v1
- gw002_example1_gpio_output_pmod1_rtos_v1a
- gw002_example1_gpio_output_pmod1_rtos_v2a
- gw002_example1_gpio_output_pmod1_rtos_v3a
- gw002_example1_gpio_output_pmod1_rtos_v3b
- gw002_example1_gpio_output_pmod1_rtos_v3c
- gw002_example1_gpio_output_pmod1_rtos_v4a

[gw002_project_gpio_hal_v1] Synergy Configuration [gw002_example1_gpio_output_pmod1_hal_v2e_copy] Synergy Configuration

Threads

HAL/Common

- g_ioport I/O Port Driver on r_ioport
- g_elc ELC Driver on r_elc
- g_cgc CGC Driver on r_cgc ...

HAL/Common Objects

HAL/Common Stacks

Generate Project Content

LC Driver on

g_cgc CGC Driver on r_cgc

g_fmi FMI Driver on r_fmi

g_ioexpander_pmod I2C Master Driver on r_sci_i2c

g_transfer0 Transfer Driver on r_dtc Event SCI3 TXI

g_transfer1 Transfer Driver on r_dtc Event SCI3 RXI

Summary BSP Clocks Pins Threads Messaging ICU Components

Properties Problems

g_ioexpander_pmod I2C Master Driver on r_sci_i2c

Property	Value
Common	
Parameter Checking	Default (BSP)
Module g_ioexpander_pmod I2C Master Driver on r_sci_i2c	
Name	g_ioexpander_pmod
Channel	3
Rate	Standard
Slave Address	0x00
Address Mode	7-Bit
SDA Output Delay (nano seconds)	300
Bit Rate Modulation Enable	Enable
Callback	NULL
Receive Interrupt Priority	Priority 2
Transmit Interrupt Priority	Priority 2
Transmit End Interrupt Priority	Priority 2

Pin Conflicts Console Synergy

hal_entry.c

(Build: No errors or warnings)

Please say that again on - gw002_project_gpio_hal_v1/src/hal_entry.c - e2 studio

File Edit Source Refactor Navigate Search Project Renesas Views Run Window Help

Project Explorer

- gw002_project_gpio_hal_v1 [Debug]
 - Binaries
 - Includes
 - src
 - pca9535
 - pca9535.c
 - pca9535.h
 - synergy_gen
 - hal_entry.c
 - synergy
 - Debug
 - script
 - synergy_cfg
 - configuration.xml
 - gw002_project_gpio_hal_v1 Debug.launch
 - GW2.pincfg
 - R7F57G27H2A01CBD.pincfg
 - synergy_cfg.txt
 - PMOD1_GPIO_output_v4_gpio_out
 - PMOD1_GPIO_output_v5a_gpio_in
 - PMOD1_GPIO_output_v6_i2c
 - PMOD1_GPIO_output_v7_spi
 - PMOD1_GPIO_output_v8_uart
 - simple_project
 - simple_project_s7g2_dk

[gw002_project_gpio_hal_v1] Synergy Conf...

```
55 /* HAL-only entry function */
56
57 /*-----*/
58 * Includes:
59 *-----*/
60
61 #include "hal_data.h"
62 #include <pca9535/pca9535.h>
63
64 /*-----*/
65 * Constants:
66 *-----*/
67
68
69 // LED locations
70 #define LEDGRNPIN IOPORT_PORT_11_PIN_06
71 #define LEDBLUPIN IOPORT_PORT_11_PIN_07
72 #define LEDORGPIN IOPORT_PORT_03_PIN_13
73 #define LEDREDPIN IOPORT_PORT_03_PIN_14
74
75 #define CFG_ALL_INPUT 0b11111111
76 #define SET_CFG_PIN_INPUT 1
77 #define SET_CFG_PIN_OUTPUT 0
78
79
```

Package

A package view is not available for the active editor.

Properties Problems

0 items

Description	Resource	Path	Location	Type
-------------	----------	------	----------	------

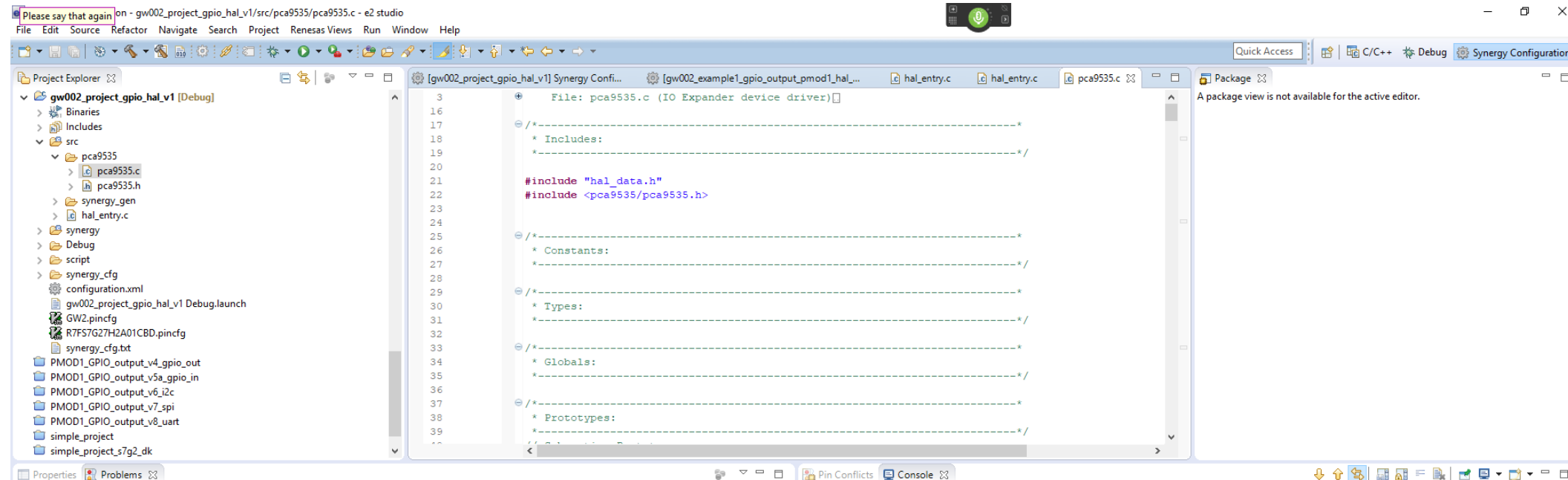
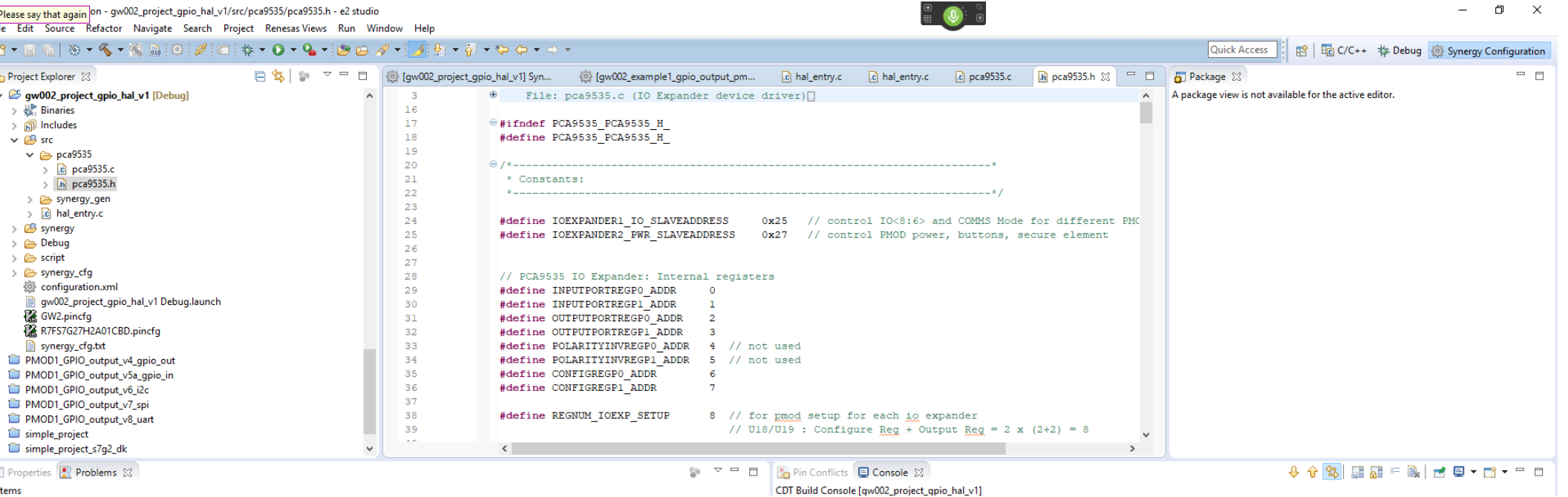
Pin Conflicts Console

CDT Build Console [gw002_project_gpio_hal_v1]

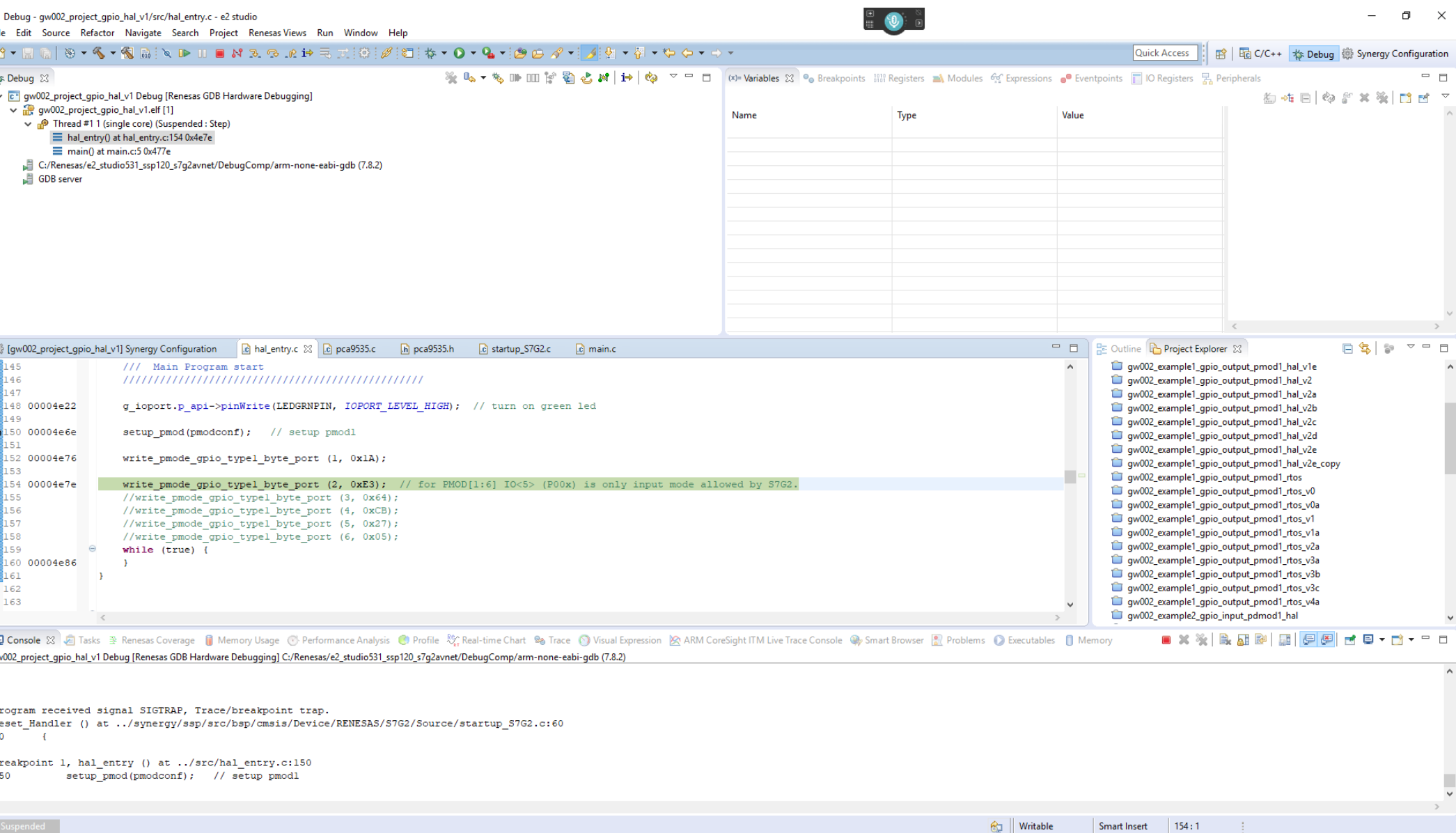
```
'Finished building: ../src/synergy_gen/pin_data.c'
'Finished building: ../src/pca9535/pca9535.c'
'Finished building: ../src/hal_entry.c'
'Building target: gw002_project_gpio_hal_v1.elf'
'Invoking: Cross ARM C Linker'
arm-none-eabi-gcc @"gw002_project_gpio_hal_v1.elf.in"
'Finished building target: gw002_project_gpio_hal_v1.elf'
'Invoking: Cross ARM GNU Create Flash Image'
'Invoking: Cross ARM GNU Print Size'
arm-none-eabi-objcopy -O srec "gw002_project_gpio_hal_v1.elf" "gw002_project_gpio_hal_v1.srec"
arm-none-eabi-size --format=berkeley "gw002_project_gpio_hal_v1.elf"
text data bss dec hex filename
24864 600 8548 34012 84dc gw002_project_gpio_hal_v1.elf
'Finished building: gw002_project_gpio_hal_v1.siz'
'Finished building: gw002_project_gpio_hal_v1.srec'
10:39:21 Build Finished. 0 errors, 0 warnings. (took 14s.942ms)
```

/gw002_project_gpio_hal_v1/src/pca9535

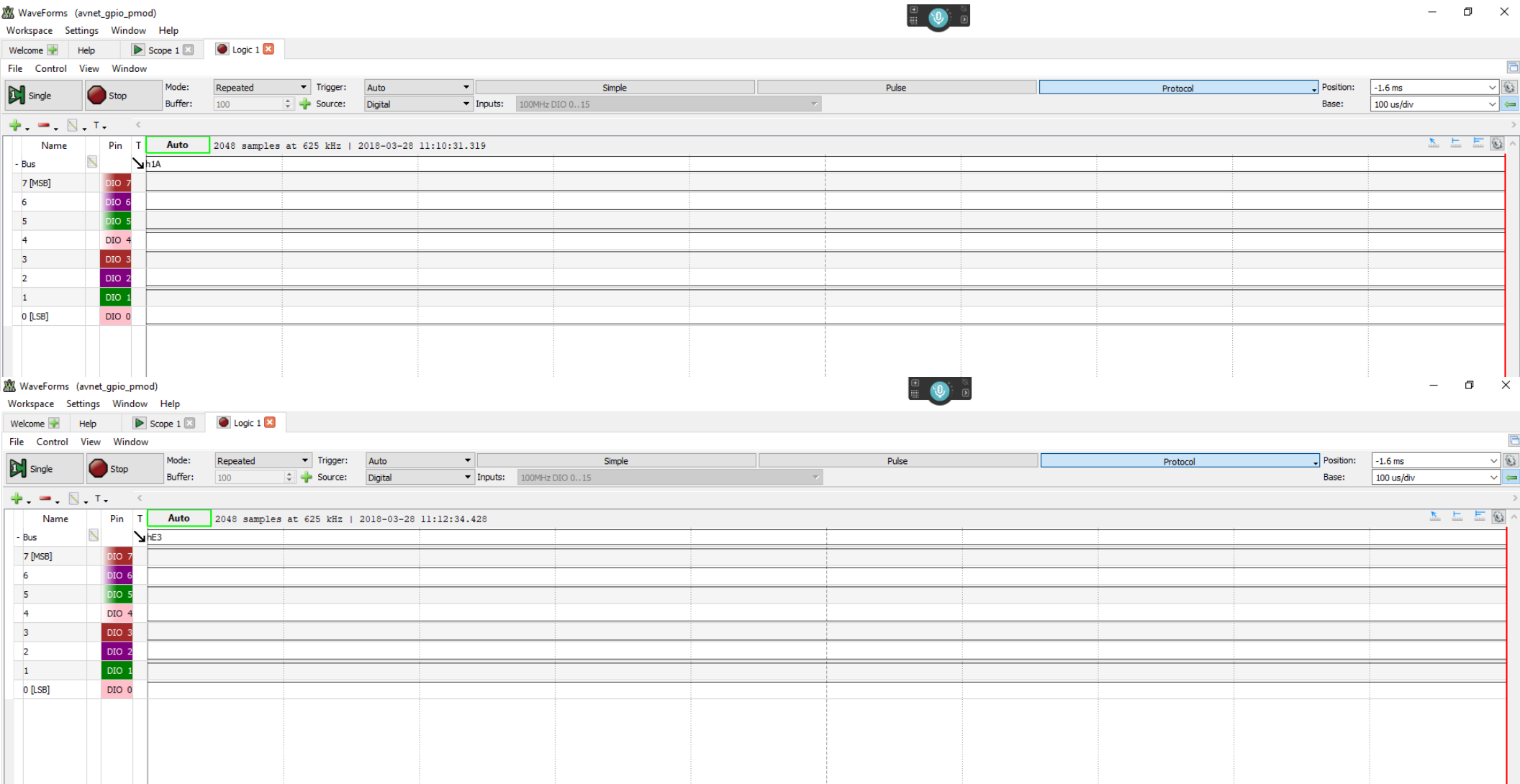
Pca9535.h/c



Run



Scope Probing



RTOS

Synergy Configuration - gw002_project_gpio_rtos_v1/configuration.xml - e2 studio

File Edit Navigate Search Project Renesas Views Run Window Help

Project Explorer

- gw002_example1_gpio_output_pmod1_rtos
- gw002_example1_gpio_output_pmod1_rtos_v0
- gw002_example1_gpio_output_pmod1_rtos_v0a
- gw002_example1_gpio_output_pmod1_rtos_v1
- gw002_example1_gpio_output_pmod1_rtos_v1a
- gw002_example1_gpio_output_pmod1_rtos_v2a
- gw002_example1_gpio_output_pmod1_rtos_v3a
- gw002_example1_gpio_output_pmod1_rtos_v3b
- gw002_example1_gpio_output_pmod1_rtos_v3c
- gw002_example1_gpio_output_pmod1_rtos_v4a
- gw002_example2_gpio_input_pmod1_hal
- gw002_example2_gpio_input_pmod1_rtos
- gw002_example3_i2c_sci7_ads1015_pmod1_hal
- gw002_example3_i2c_sci7_ads1015_pmod1_rtos
- gw002_example3_spi_bmc150_pmod1_rtos
- gw002_example4_uart_pc_pmod1_hal
- gw002_example4_uart_pc_pmod1_rtos
- gw002_lesson1_gpio_output_pmod1_hal
- gw002_lesson1_gpio_output_pmod1_hal_v2
- gw002_lesson2_gpio_input_pmod1_hal_v1
- gw002_lesson3_i2c_sci7_ads1015_pmod1_hal_v1
- gw002_lesson5_uart_pmod1_hal_v1
- gw002_project_gpio_hal_v1
- gw002_project_gpio_rtos_v1
 - Includes
 - src
 - synergy
 - script
 - synergy_cfg
 - configuration.xml
 - gw002_project_gpio_rtos_v1 Debug.launch
 - GW2.pincfg
 - R7F57G27H2A01CBD.pincfg
 - synergy_cfg.txt
 - PMOD1_GPIO_output_v4_gpio_out
 - PMOD1_GPIO_output_v5a_gpio_in
 - PMOD1_GPIO_output_v6_i2c
 - PMOD1_GPIO_output_v7_spi
 - PMOD1_GPIO_output_v8_uart

*[gw002_project_gpio_rtos_v1] Synergy Configuration

Threads

Threads

- HAL/Common
 - g_elc ELC Driver on r_elc
 - g_cgic CGIC Driver on r_cgic
 - g_ioport I/O Port Driver on r_ioport ...
- PMOD Configure Thread

PMOD Configure Thread Objects

PMOD Configure Thread Stacks

- Communications Framework on sf_el_nx_comms
- Communications Framework on sf_el_ux_comms
- Communications Framework on sf_uart_comms
- I2C Framework Device on sf_i2c
- I2C Framework Shared Bus on sf_i2c
- SPI Framework Device on sf_spi
- SPI Framework Shared Bus on sf_spi
- [DEPRECATED] Communications Framework on sf_el_ux_comms

Generate Project Content

- Analog >
- Audio >
- Connectivity >
- File System >
- Graphics >
- Input >
- Networking >
- Services >
- USB >

Driver

- Framework
- Renesas SYBD
- X-Ware

Package

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	P302	P303	VSS	VSS	P905	P911	VCC	VLO	VCL1	P901	P902	VCCUSUBSDP	P407		
B	P304	P305	VCC	VCC	P312	P312	P200	VLO	VSS	P901	P903	VSSUSUBSDM	P408		
C	P304	P309	P310	P311	P201	P904	VSS	P315	P205	P207	P409	P410			
D	P305	P306	P307	P308	P310	P903	VCC	P204	P413	P412	P411	P708			
E	P114	P914	P915	P908	P909	P900	P313	P414	P711	P709	P415	VSS			
F	P814	P812	P813	P808	P300	P906	P907	RES	P314	P710	P713	VSSUSUBSDP	P407		
G	P813	P415	P414	P605	P412	P411	P408	P315	P206	P713	P807	VSSUSUBSDP	P407		
H	VCL1	VSS	VCC	P409	P410	P402	P413	P913	P800	P804	P806	VCC	AVCCU	P213	P212
J	P407	P406	P405	P404	P403	P401	P400	P703	P406	P704	P802	VSS	XCOLUT	XICIN	
K	P805	P804	P803	P107	P607	P606	P808	P809	P515	P404	P702	P803	P801	VBAT	VCL
L	P802	P801	P600	P106	P811	P812	VCC	VSS	P007	P003	VSS	VCC	P705	P706	P707
M	VSS	VCC	P105	P804	P505	P506	P508	P015	P014	P010	P004	P806	P405	P700	P701
N	P102	P103	P104	P501	P502	P507	P510	VREFL	AVSS0	P011	P008	P002	P400	P402	P403
P	P201	P800	P810	P803	P503	P509	VCC	AVCC0	VREFL	P006	P005	P807	P513	P401	P401
R	P100	P801	P802	P504	VCL2	VSS	VREFH	VREFH	P009	P005	P000	P805	P512	P511	

R7F57G27xxxxxxBD - 224BGA (Top View)

Connection status:

Error Warning OK

Properties Problems

New Thread

Settings	Property	Value
▼ Thread	Symbol	pmod_configure_thread
	Name	PMOD Configure Thread
	Stack size (bytes)	1024
	Priority	1
	Auto start	Enabled
	Time slicing interval (ticks)	1

Pin Conflicts Console

```
<terminated> gw002_project_gpio_hal_v1 Debug [Renesas GDB Hardware Debugging] GDB server
GDBServer for Renesas targets. Version 5.3.0.023 (Jan 3 2017 15:08:05)

Starting server with the following options:
Raw options : C:\Renesas\e2_studio531_ssp120_s7g2avnet\eclipse\..\DebugComp\e2-server-gdb -g :

Connecting to R7F57G27H, ARM Target
GDBServer endian : little
Target power : off

Starting target connection
```

Synergy Configuration - gw002_project_gpio_rtos_v1/configuration.xml - e2 studio

File Edit Navigate Search Project Renesas Views Run Window Help



Project Explorer

- archive_gw002_example1_gpio_output_pmod1_hal_v0
- archive_gw002_example1_gpio_output_pmod1_hal_v1
- gw002_example1_gpio_output_pmod1_hal
- gw002_example1_gpio_output_pmod1_hal_v1
- gw002_example1_gpio_output_pmod1_hal_v1a
- gw002_example1_gpio_output_pmod1_hal_v1b
- gw002_example1_gpio_output_pmod1_hal_v1c
- gw002_example1_gpio_output_pmod1_hal_v1d
- gw002_example1_gpio_output_pmod1_hal_v1e
- gw002_example1_gpio_output_pmod1_hal_v2
- gw002_example1_gpio_output_pmod1_hal_v2a
- gw002_example1_gpio_output_pmod1_hal_v2b
- gw002_example1_gpio_output_pmod1_hal_v2c
- gw002_example1_gpio_output_pmod1_hal_v2d
- gw002_example1_gpio_output_pmod1_hal_v2e
- gw002_example1_gpio_output_pmod1_hal_v2e_copy
- gw002_example1_gpio_output_pmod1_rtos
- gw002_example1_gpio_output_pmod1_rtos_v0
 - Binaries
 - Includes
 - src
 - synergy
 - Debug
 - script
 - synergy_cfg
 - configuration.xml
 - gw002_example1_gpio_output_pmod1_rtos Debug.jlink
 - gw002_example1_gpio_output_pmod1_rtos_v0 Debug.jlink
 - gw002_example1_gpio_output_pmod1_rtos_v0 Debug.launch
 - GW2.pincfg
 - PMOD1_GPIO_output_v1 Debug.jlink
 - PMOD1_GPIO_output_v2_mycode Debug.jlink
 - PMOD1_GPIO_output_v3_u19pwr Debug.jlink
 - PMOD1_GPIO_output_v4_gpio_out Debug.jlink
 - R7FS7G27H2A01CBD.pincfg
 - synergy_cfg.txt
 - gw002_example1_gpio_output_pmod1_rtos_v0a
 - gw002_example1_gpio_output_pmod1_rtos_v1
 - gw002_example1_gpio_output_pmod1_rtos_v1a

*[gw002_project_gpio_rtos_v1] Synergy Configuration

[gw002_example1_gpio_output_pmod1_rtos_v0] Synergy Configuration

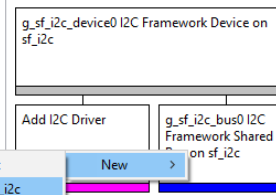
Threads

Threads

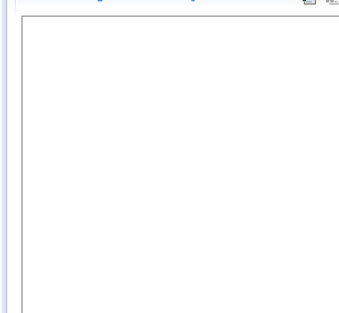
- HAL/Common
 - g_elc ELC Driver on r_elc
 - g_cgc CGC Driver on r_cgc
 - g_ioport I/O Port Driver on r_ioport ...
- PMOD Configure Thread
 - g_sf_i2c_device0 I2C Framework Device on sf_i2c

- I2C Master Driver on r_iic
- I2C Master Driver on r_sci_i2c

PMOD Configure Thread Stacks



PMOD Configure Thread Objects



Summary BSP Clocks Pins Threads Messaging ICU Components

Generate Project Content

Package

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
A	P302	P303	VSS	VSS	P605	P611	VCC	VLO	VCL1	P602	P202	VCCUSBSOP	P407			A
B	P109	P108	P301	VCC	VCC	P312	P312	P200	VLO	VSS	P901	P203	VSSUSBSOP	P408		B
C	P111	P110	P112	P304	P309	P310	P311	P201	P904	VSS	P315	P205	P207	P409	P410	C
D	VCC	VSS	P113	P305	P306	P307	P308	P910	P903	VCC	P204	P413	P412	P411	P708	D
E	P610	P611	P115	P114	P914	P915	P908	P909	P900	P313	P414	P711	P709	P415	VSS	E
F	P614	P613	P613	P608	P300	P906	P907	RES	P314	P710	P712	VSS	VCCUSBSOP	P416	P417	F
G	P613	P615	P614	P609	P612	P611	P615	P206	P713	P807	VSS	VCCUSBSOP	P418	P419	P420	G
H	VCL1	VSS	VCC	P609	P610	P612	P613	P614	P615	P616	VCC	AVCCLE	P213	P212		H
J	P607	P606	P605	P604	P603	P602	P601	P703	P406	P704	P603	P605	VCCOUT	XCTIN		J
K	P605	P604	P603	P107	P607	P606	P608	P915	P404	P702	P603	P601	VBAT	VCL		K
L	P602	P601	P600	P106	P611	P612	VCC	VSS	P507	P003	VSS	VCC	P705	P706	P707	L
M	VSS	VCC	P105	P604	P505	P506	P608	P615	P614	P610	P604	P606	P405	P700	P701	M
N	P102	P103	P104	P501	P502	P507	P510	VREFL	AVSS0	P611	P608	P002	P402	P403		N
P	P101	P600	P610	P603	P503	P509	VCC	AVCC0	VREFL0	P606	P601	P607	P513	P514	P401	P
R	P100	P601	P602	P500	P504	VCL2	VSS	VREFH0	P609	P005	P600	P605	P512	P511		R

R7FS7G27xxxxxBD - 224BGA (Top View)

Connection status:
Error Warning OK

Properties Problems

Properties are not available.

Pin Conflicts Console

```
<terminated> gw002_project_gpio_hal_v1 Debug [Renesas GDB Hardware Debugging] GDB server
GDBServer for Renesas targets. Version 5.3.0.023 (Jan 3 2017 15:08:05)

Starting server with the following options:
Raw options : C:\Renesas\e2_studio531_ssp120_s7g2avnet\eclipse\..\DebugComp\e2-server-gdb -g

Connecting to R7FS7G27H, ARM Target
GDBServer endian : little
Target power : off
Starting target connection
```

Add framework driver for U18

Synergy Configuration - gw002_project_gpio_rtos_v1/configuration.xml - e2 studio

File Edit Navigate Search Project Renesas Views Run Window Help

Project Explorer

- archive_gw002_example1_gpio_output_pmod1_hal_v0
- archive_gw002_example1_gpio_output_pmod1_hal_v1
- gw002_example1_gpio_output_pmod1_hal
- gw002_example1_gpio_output_pmod1_hal_v1
- gw002_example1_gpio_output_pmod1_hal_v1a
- gw002_example1_gpio_output_pmod1_hal_v1b
- gw002_example1_gpio_output_pmod1_hal_v1c
- gw002_example1_gpio_output_pmod1_hal_v1d
- gw002_example1_gpio_output_pmod1_hal_v1e
- gw002_example1_gpio_output_pmod1_hal_v2
- gw002_example1_gpio_output_pmod1_hal_v2a
- gw002_example1_gpio_output_pmod1_hal_v2b
- gw002_example1_gpio_output_pmod1_hal_v2c
- gw002_example1_gpio_output_pmod1_hal_v2d
- gw002_example1_gpio_output_pmod1_hal_v2e
- gw002_example1_gpio_output_pmod1_hal_v2e_copy
- gw002_example1_gpio_output_pmod1_rtos
- gw002_example1_gpio_output_pmod1_rtos_v0

Threads

HAL/Common

- g_elc ELC Driver on r_elc
- g_cgc CGC Driver on r_cgc
- g_ioport I/O Port Driver on r_ioport ...
- PMOD Configure Thread
- g_sf_i2c_io_exp_u18 I2C Framework Device on s

PMOD Configure Thread Objects

PMOD Configure Thread Stacks

- g_sf_i2c_io_exp_u18 I2C Framework Device on sf_i2c
- g_i2c0 I2C Master Driver on r_sci_i2c
- g_sf_i2c_bus0 I2C Framework Shared Bus on sf_i2c

Add DTC Driver for Transmission [Recommended but optional]

Add DTC Driver for Reception [Recommended but optional]

Summary BSP Clocks Pins Threads Messaging ICU Components

Package

Pin Conflicts Console

g_i2c0 I2C Master Driver on r_sci_i2c

Property	Value
Common	
Parameter Checking	Default (BSP)
Module g_i2c0 I2C Master Driver on r_sci_i2c	
Name	g_i2c0
Channel	3
Rate	Standard
Slave Address	0x25
Address Mode	7-Bit
SDA Output Delay (nano seconds)	300
Bit Rate Modulation Enable	Enable
Callback	NULL
Receive Interrupt Priority	Priority 2
Transmit Interrupt Priority	Priority 2
Transmit End Interrupt Priority	Priority 2

Properties Problems

g_i2c0 I2C Master Driver on r_sci_i2c

Settings

Information

Property Value

Common

Parameter Checking Default (BSP)

Module g_i2c0 I2C Master Driver on r_sci_i2c

Name g_i2c0

Channel 3

Rate Standard

Slave Address 0x25

Address Mode 7-Bit

SDA Output Delay (nano seconds) 300

Bit Rate Modulation Enable Enable

Callback NULL

Receive Interrupt Priority Priority 2

Transmit Interrupt Priority Priority 2

Transmit End Interrupt Priority Priority 2

Pin Conflicts Console

<terminated> gw002_project_gpio_hal_v1 Debug [Renesas GDB Hardware Debugging] GDB server

GDBServer for Renesas targets. Version 5.3.0.023 (Jan 3 2017 15:08:05)

Starting server with the following options:

Raw options : C:\Renesas\e2_studio531_ssp120_s7g2avnet\eclipse\..\DebugComp\e2-server-gdb -g :

Connecting to R7FS7G27H, ARM Target

GDBServer endian : little

Target power : off

Starting target connection

Finished target connection

Target connection status - OK

Starting download

Option Function Select, writing to address 0x00000400 with data ffffffff

SECMPUxxx, writing to address 0x00000408 with data ffffffff

Finished download

Hardware breakpoint set at address 0x4e6e

Hardware breakpoint set at address 0x4e6e

Starting download

Option Function Select, writing to address 0x00000400 with data ffffffff

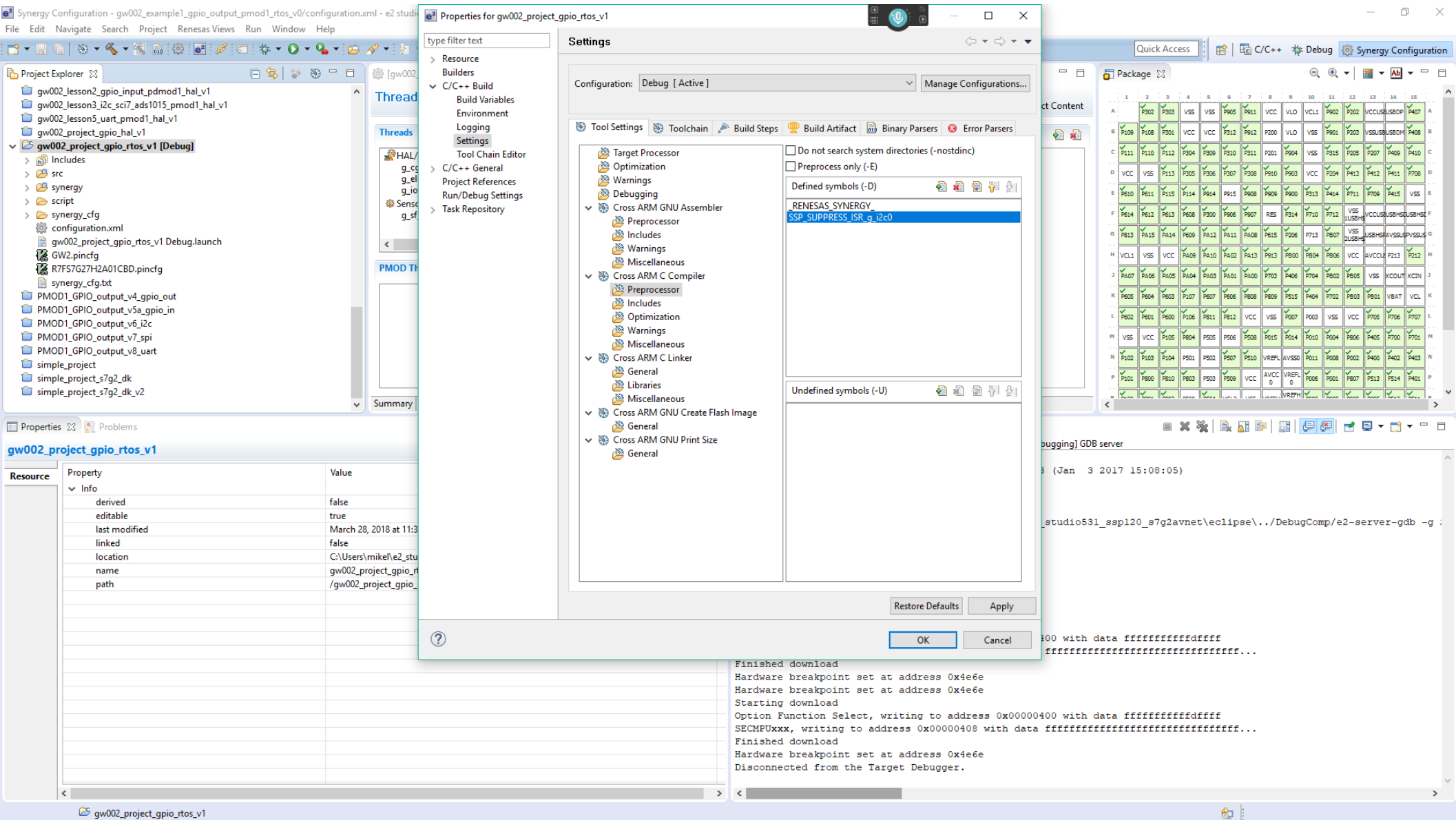
SECMPUxxx, writing to address 0x00000408 with data ffffffff

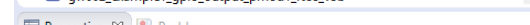
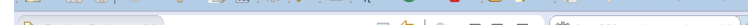
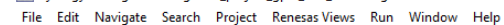
Finished download

Hardware breakpoint set at address 0x4e6e

Disconnected from the Target Debugger.

Suppress errors.





Clean Build

Synergy Configuration - gw002_project_gpio_rtos_v1/src/pmod_configure_thread_entry.c - e2 studio

File Edit Source Refactor Navigate Search Project Renesas Views Run Window Help

Project Explorer

- gw002_example3_i2c_sci7_ads1015_pmod1_rtos
- gw002_example3_spi_bmc150_pmod1_rtos
- gw002_example4_uart_pc_pmod1_hal
- gw002_example4_uart_pc_pmod1_rtos
- gw002_lesson1_gpio_output_pmod1_hal
- gw002_lesson1_gpio_output_pmod1_hal_v2
- gw002_lesson2_gpio_input_pmod1_hal_v1
- gw002_lesson3_i2c_sci7_ads1015_pmod1_hal_v1
- gw002_lesson5_uart_pmod1_hal_v1
- gw002_project_gpio_hal_v1
- gw002_project_gpio_rtos_v1
 - Binaries
 - Includes
 - src
 - synergy_gen
 - hal_entry.c
 - pmod_configure_thread_entry.c
 - synergy
 - Debug
 - script
 - synergy_cfg
 - configuration.xml
 - gw002_project_gpio_rtos_v1 Debug.launch
 - GW2.pincfg

Editor

```
#include "pmod_configure_thread.h"

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26

/* Constants */
// GPIO Type 1

#define PMOD1_GPIO_IO1  IOPORT_PORT_10_PIN_05
#define PMOD1_GPIO_IO2  IOPORT_PORT_10_PIN_02
#define PMOD1_GPIO_IO3  IOPORT_PORT_10_PIN_03
#define PMOD1_GPIO_IO4  IOPORT_PORT_10_PIN_04
#define PMOD1_GPIO_IO5  IOPORT_PORT_04_PIN_00
#define PMOD1_GPIO_IO6_MASK  0B00001000 // port 0
#define PMOD1_GPIO_IO7_MASK  0B01000000 // port 1
#define PMOD1_GPIO_IO8_MASK  0B10000000 // port 1

#define LEDGRNPIN  IOPORT_PORT_11_PIN_06
#define LEDBLUPIN  IOPORT_PORT_11_PIN_07
#define LEDORGPIN  IOPORT_PORT_03_PIN_13
#define LEDREDPIN  IOPORT_PORT_03_PIN_14

#define IOEXPANDERU18_IO_SLAVEADDRESS  0x25 // control IO<8:6> and COMMS Mode for different I
#define IOEXPANDERU19_FWR_SLAVEADDRESS  0x27 // control PMOD power, buttons, secure element

// PCA9535 IO Expander: Internal registers
#define INPUTPORTREGP0_ADDR  0
#define INPUTPORTREGP1_ADDR  1
```

Properties

0 errors, 4 warnings, 0 others

Description	Resource	Path	Location	Type
'sci_siic_open_parameter_check' defined but not used [-Wunused-function]	r_sci_i2c.c	/gw002_example1...	line 1771	C/C++ Probl...
Unused declaration of variable 'g_heap'	startup_S7G2.c	/gw002_example1...	line 115	Code Analysi...
unused parameter 'p_ctrl' [-Wunused-parameter]	r_sci_i2c.c	/gw002_example1...	line 1567	C/C++ Probl...
unused parameter 'p_ctrl' [-Wunused-parameter]	r_sci_i2c.c	/gw002_example1...	line 1616	C/C++ Probl...

Pin Conflicts

Console

CDT Build Console [gw002_project_gpio_rtos_v1]

```
C:\Renesas\e2_studio531_ssp120_s7g2avnet\eclipse\../Utilities/isdebuild arm-none-eabi-gcc -mcpu=cortex-m4 -mthumb -m...
'Finished building: ../src/synergy_gen/common_data.c'
'Finished building: ../src/hal_entry.c'
'Finished building: ../src/pmod_configure_thread_entry.c'
'Building target: gw002_project_gpio_rtos_v1.elf'
'Invoking: Cross ARM C Linker'
arm-none-eabi-gcc @"gw002_project_gpio_rtos_v1.elf.in"
'Finished building target: gw002_project_gpio_rtos_v1.elf'
'Invoking: Cross ARM GNU Create Flash Image'
'Invoking: Cross ARM GNU Print Size'
arm-none-eabi-objcopy -O srec "gw002_project_gpio_rtos_v1.elf" "gw002_project_gpio_rtos_v1.srec"
arm-none-eabi-size --format=berkeley "gw002_project_gpio_rtos_v1.elf"
text    data    bss     dec     hex filename
29500    212    10172   39884   9bcc gw002_project_gpio_rtos_v1.elf
'Finished building: gw002_project_gpio_rtos_v1.srec'
'Finished building: gw002_project_gpio_rtos_v1.siz'
12:13:06 Build Finished. 0 errors, 0 warnings. (took 3s.800ms)
```

SSP_ERR_IRQ_BSP_DISABLED

Debug - gw002_project_gpio_rtos_v1/src/pmod_configure_thread_entry.c - e2 studio

File Edit Source Refactor Navigate Search Project Renesas Views Run Window Help

Quick Access C/C++ Debug Synergy Configuration

Debug gw002_project_gpio_rtos_v1 Debug [Renesas GDB Hardware Debugging]

- gw002_project_gpio_rtos_v1.elf [1]
 - Thread #1 1 (single core) (Suspended : Step)
 - pmod_configure_thread_entry() at pmod_configure_thread_entry.c:103 0x456e
 - _tx_thread_shell_entry() at tx_thread_shell_entry.c:164 0x5664
 - 0xffffffff
 - Thread #4 1003 (single core - PMOD Configure Thread [Ready RC:1]) (Suspended : User Request)
 - pmod_configure_thread_entry() at pmod_configure_thread_entry.c:103 0x456e
 - _tx_thread_shell_entry() at tx_thread_shell_entry.c:164 0x5664
 - 0xffffffff
- C:/Renesas/e2_studio531_ssp120_s7g2avnet/DebugComp/arm-none-eabi-gdb (7.8.2)
- GDB server

Name	Type	Value
err	ssp_err_t	SSP_ERR_IRQ_BSP_DISABLED

```
void setup_pmod1_gpio(void);

ssp_err_t pca3535_open(uint8_t slaveaddr);
ssp_err_t pca3535_register_write(uint8_t slaveaddr, uint8_t regaddr, uint8_t regdata);
ssp_err_t pca3535_register_read(uint8_t slaveaddr, uint8_t regaddr, uint8_t *regdata);

/* PMOD Configure Thread entry function */
void pmod_configure_thread_entry(void)
{
    ssp_err_t err;

    err = g_sf_i2c_io_exp_ul8.p_api->open(g_sf_i2c_io_exp_ul8.p_ctrl, g_sf_i2c_io_exp_ul8.p_cfg);
    if (err)
        g_ioport.p_api->pinWrite(LEDREDPIN, true);

    setup_pmod1_gpio();

    while (1)
```

Console gw002_project_gpio_rtos_v1 Debug [Renesas GDB Hardware Debugging] C:/Renesas/e2_studio531_ssp120_s7g2avnet/DebugComp/arm-none-eabi-gdb (7.8.2)

```
102 err = g_sf_i2c_io_exp_ul8.p_api->open(g_sf_i2c_io_exp_ul8.p_ctrl, g_sf_i2c_io_exp_ul8.p_cfg);
[New Thread 1.1003]

Program received signal SIGINT, Interrupt.
pmod_configure_thread_entry () at ../src/pmod_configure_thread_entry.c:102
102 err = g_sf_i2c_io_exp_ul8.p_api->open(g_sf_i2c_io_exp_ul8.p_ctrl, g_sf_i2c_io_exp_ul8.p_cfg);
pmod_configure_thread_entry () at ../src/pmod_configure_thread_entry.c:103
103 if (err)
Unexpected vCont reply in non-stop mode: E31
```

Suspended Writable Smart Insert 103 : 1