Keil C Compiler Manual

Rev A

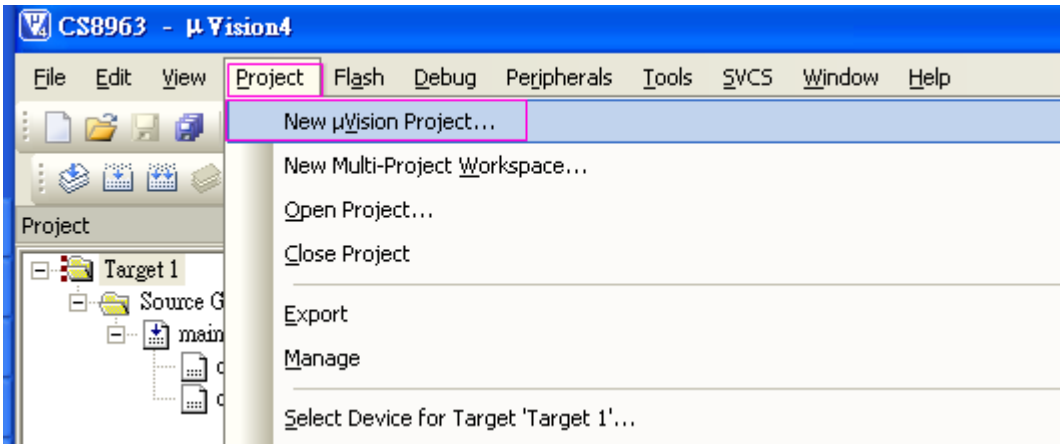
June, 2022

This application note can apply to most Lumissil MCU CS89XX series products.

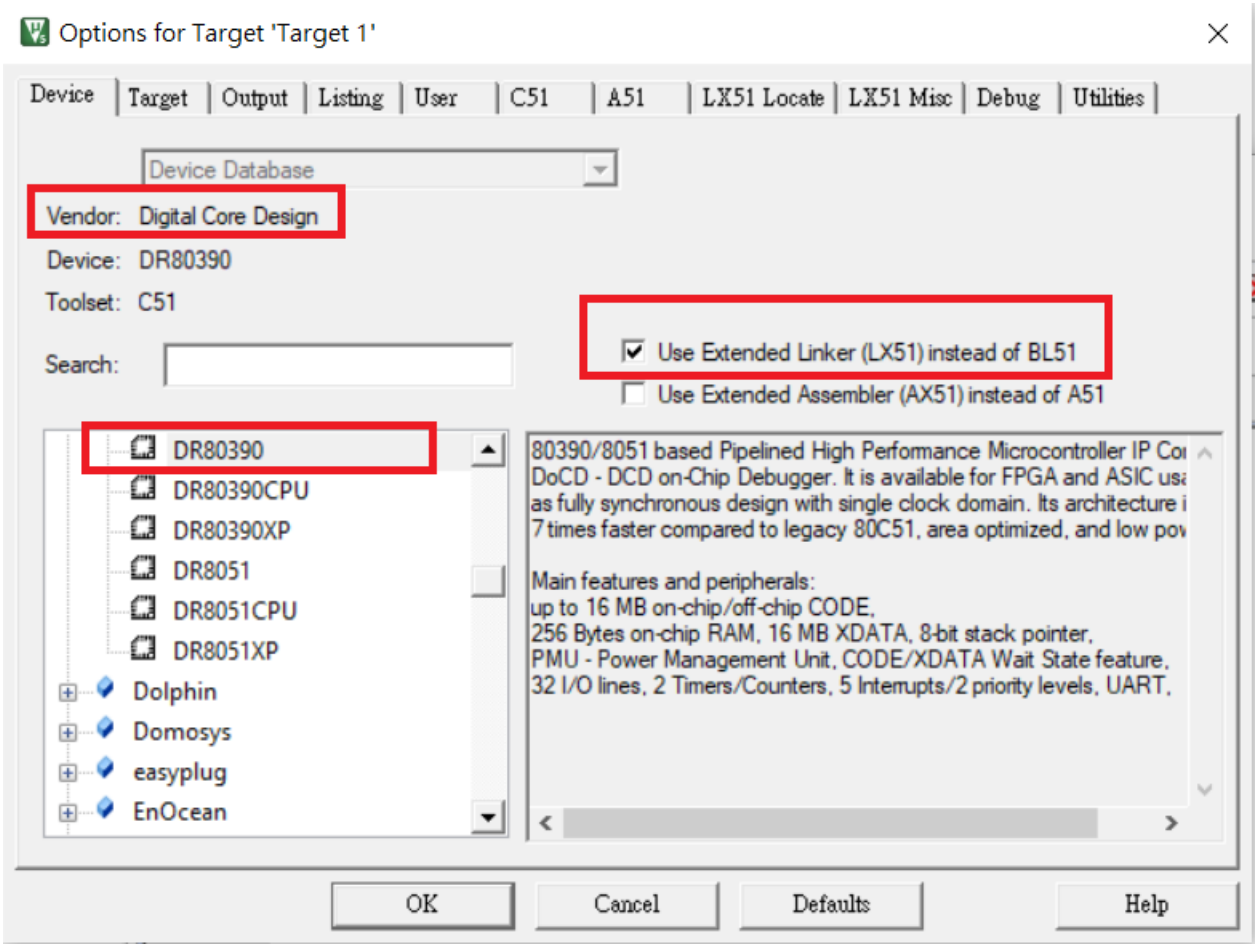
1. Creating Projects

1.1 Setup the project

Project / New uVision Project：

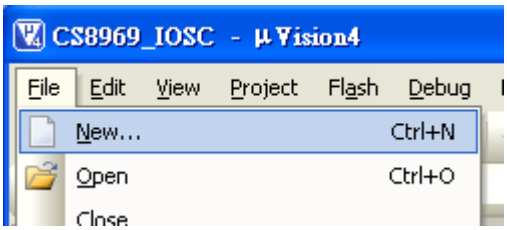


Select the microcontroller (MCU) from the device Database. Lumissil MCU is compatible with Digital Core Design DR80390.

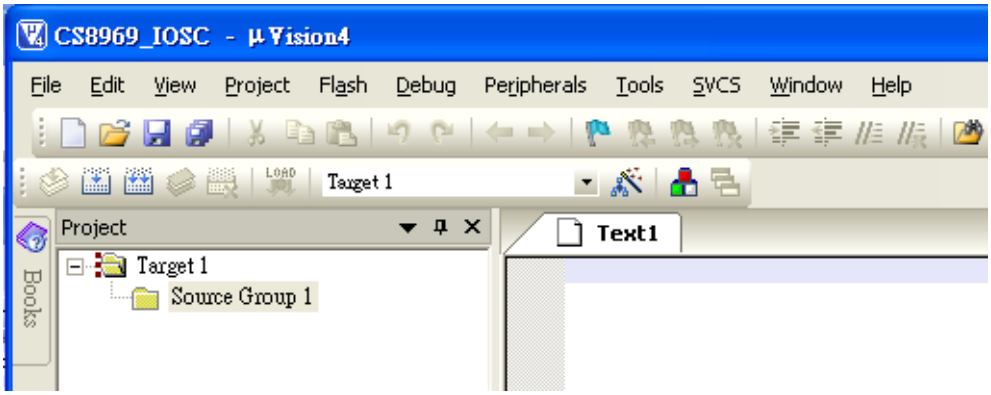


1.2 Create a new project

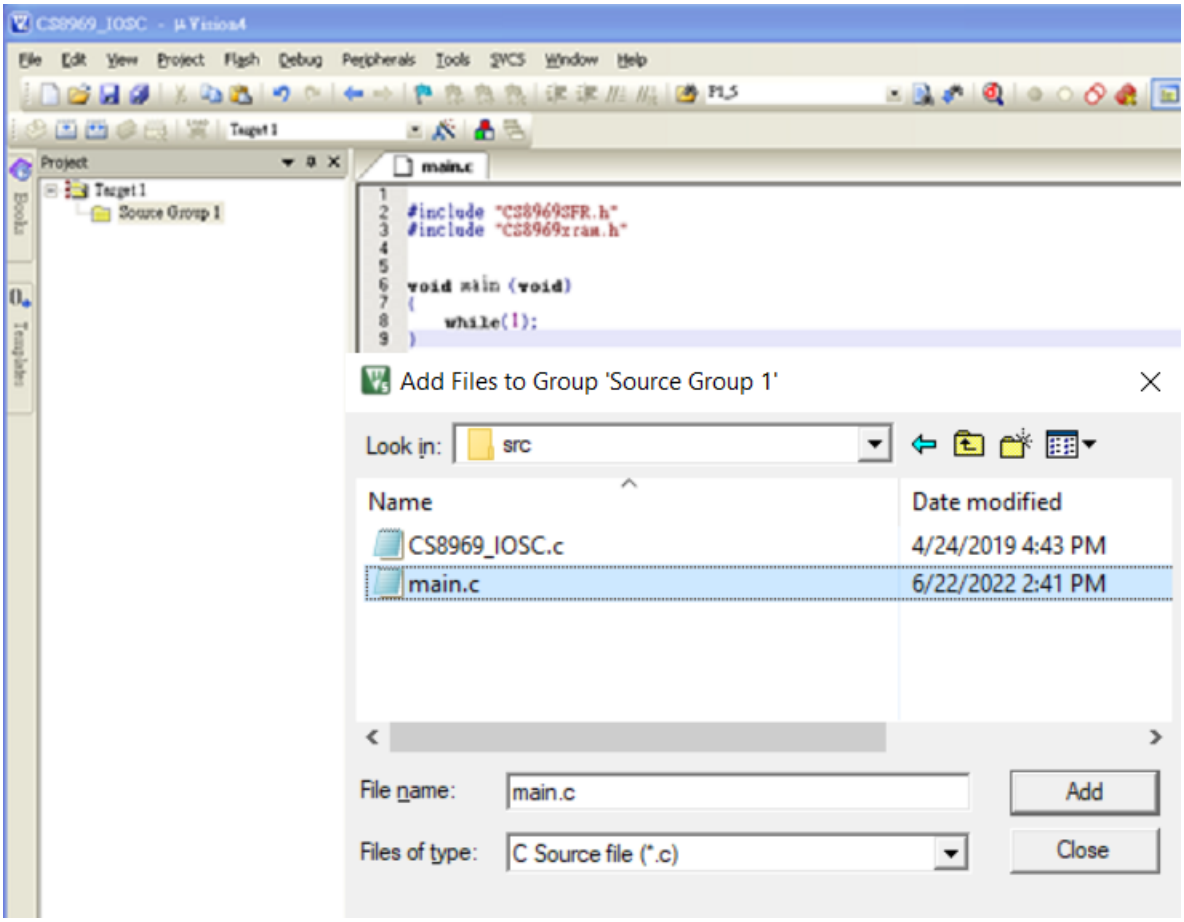
Click the "**File**" tab for **New**….



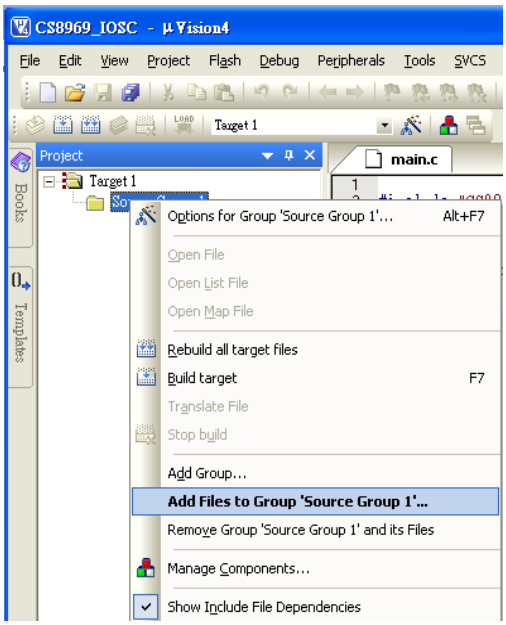
Add a new file to the project.

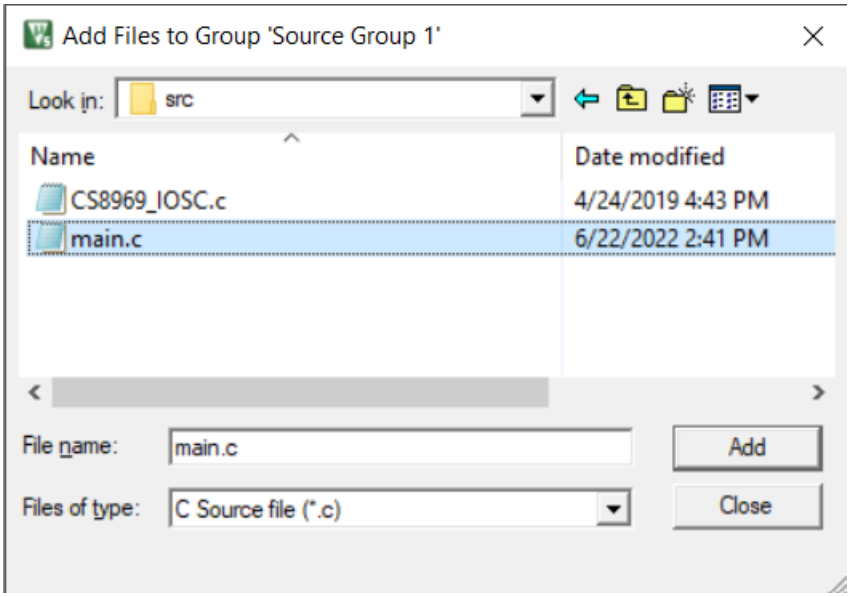


Select **File / Save As** and type the file name, and then press **Save**.



Include files with extension file name c and h: Add Files to Group ’Source Group 1’.

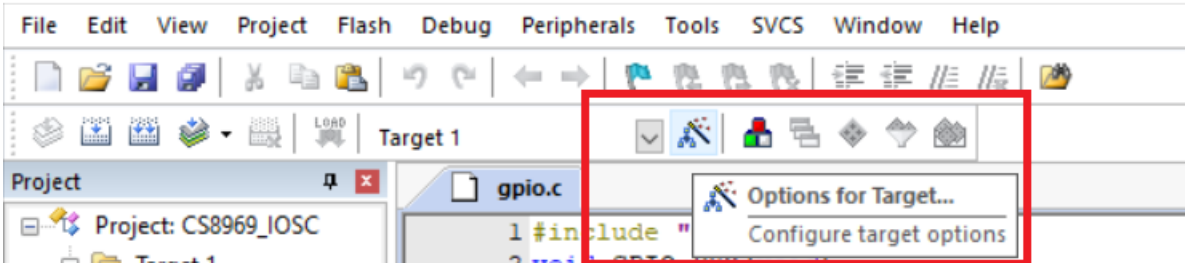

CS8969_IOSC - µVision4
File Edit View Project Flash Debug Peripherals Tools SVCS
Target 1
Project
Target 1
main.c
Books
Templates
Options for Group 'Source Group 1'... Alt+F7
Open File
Open List File
Open Map File
Rebuild all target files
Build target F7
Translate File
Stop build
Add Group...
Add Files to Group 'Source Group 1'...
Remove Group 'Source Group 1' and its Files
Manage Components...
Show Include File Dependencies


Add Files to Group 'Source Group 1'
Look in: src
Name
Date modified
CS8969_IOSC.c
4/24/2019 4:43 PM
main.c
6/22/2022 2:41 PM
File name: main.c
Add
Files of type: C Source file (*.c)
Close

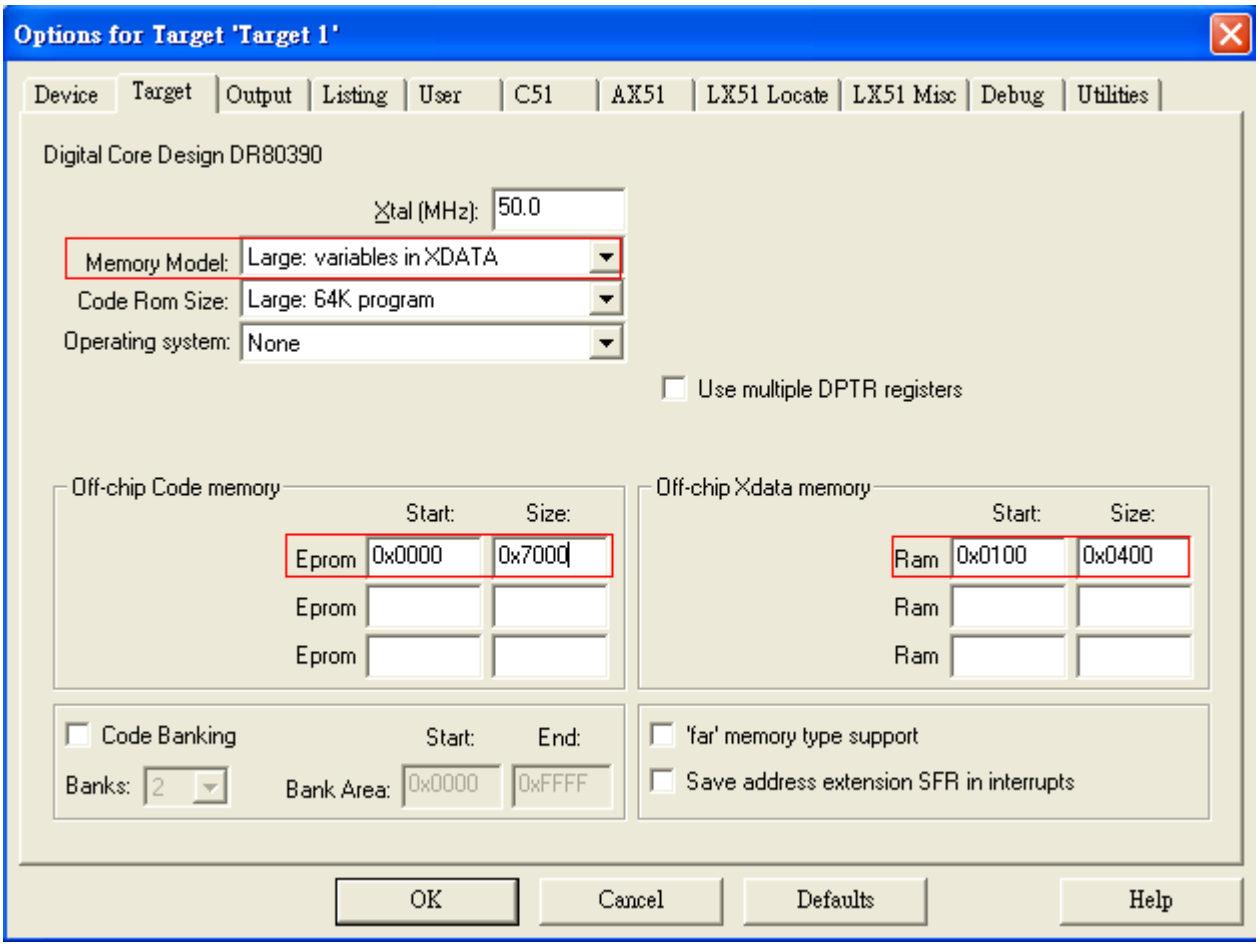
2. Set Tool Options

2.1 MCU(Target) option page and its parameter

Click the “**Options for Target**” toolbar button or the menu **Project** — **Options for Target “Target 1”**.



Then comes up the below window.



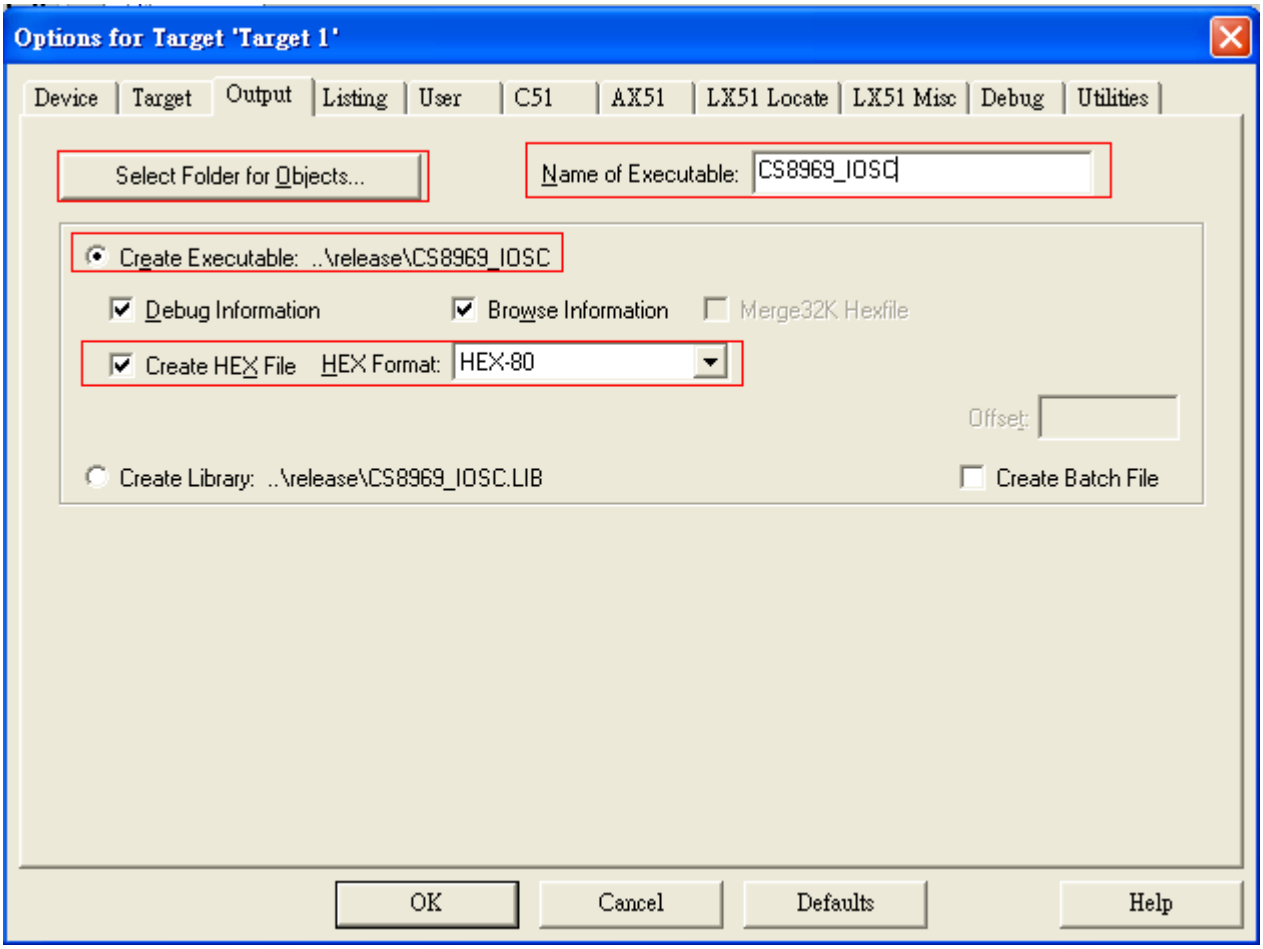
The options depend on the device and the selected toolchain. All settings are captured in a project target. For example: CS8969 Code memory starts at address 0x0000 and code size is 0x7000. It must retain 4K data size for boot code. Xdata memory address starts at 0x0100 with Ram size 0x0400.

For other Lumissil MCU parts, please refer to the following table for code memory and Xdata memory setting. Users can also check the memory map of our product datasheets for reference. Please note there are 8-byte code security keys located at the last of the user program space for protection from pirate access to information.

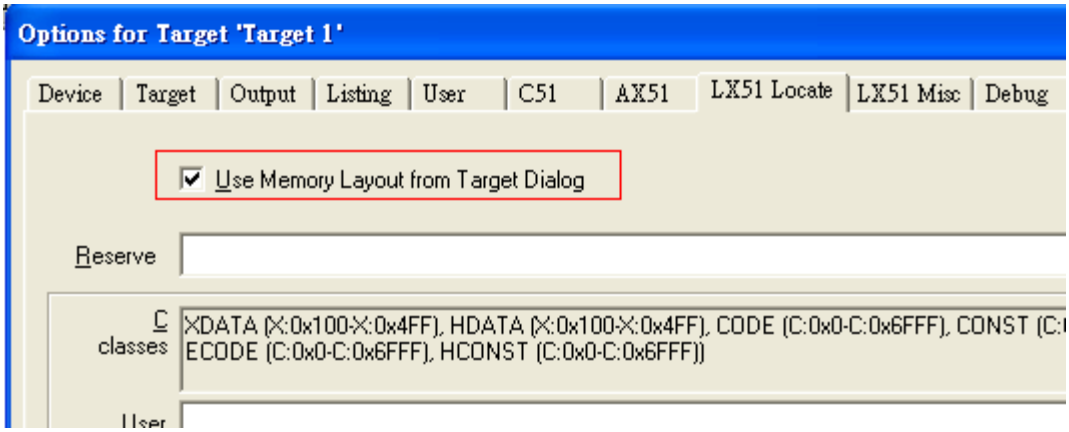
	Eprom Start add.	Eprom Size	Xdata Start add.	Xdata Size
CS8973	0x0000	0x7000	0x0100	0x0400
CS8974	0x0000	0x7000	0x0100	0x0400
CS8975	0x0000	0x3000	0x0100	0x0800
CS8977	0x0000	0xF000	0x0100	0x0800

2.2 Output configure

The user needs to input “**Name of Executable**” output file name with folder location. And choose a few options after clicking “**Create Executable”** checkbox as the below figure.



Click “**LX51 Locate**” tab and check the checkbox “**Use Memory Layout from Target Dialog**”.

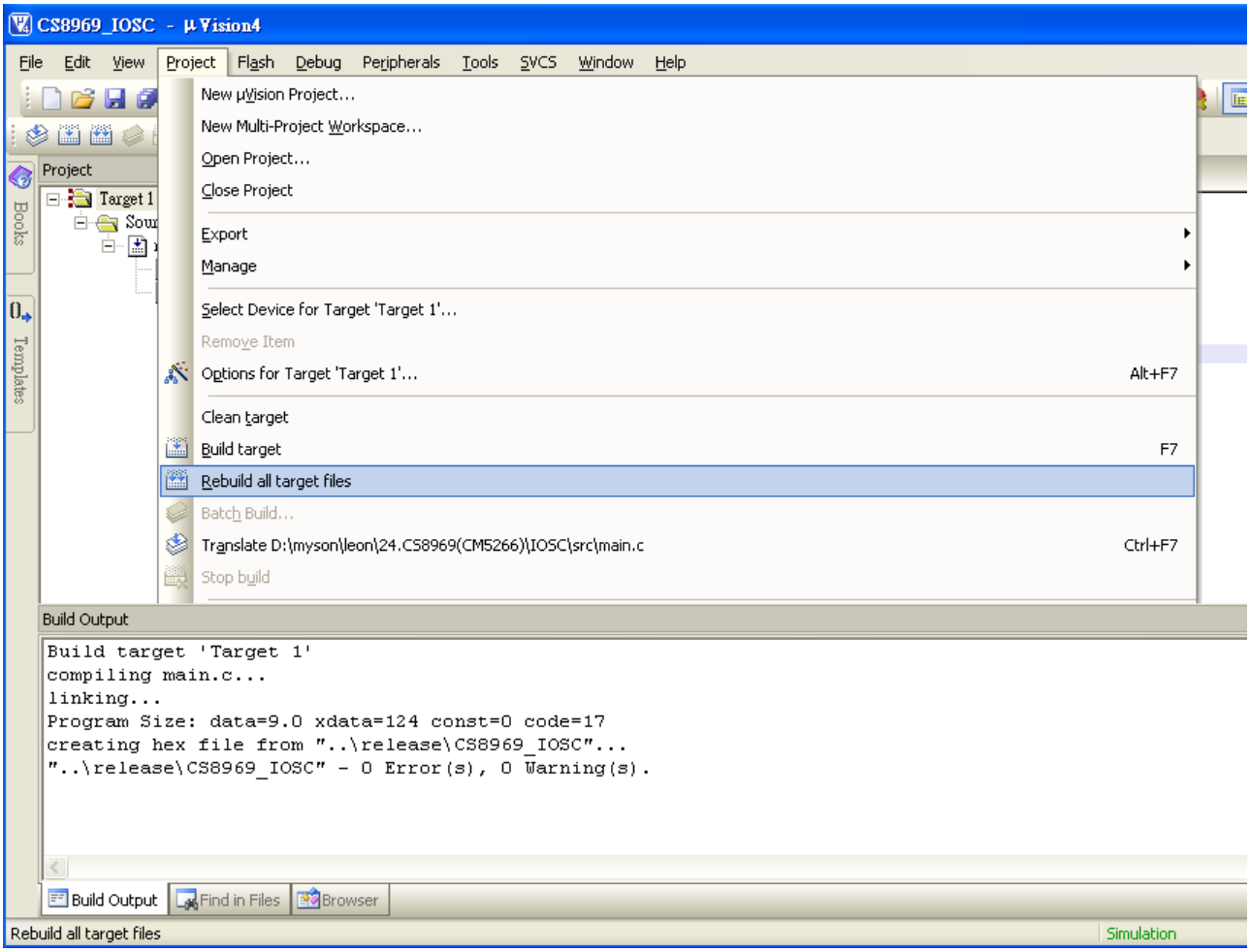

Options for Target 'Target 1'
Device
Target
Output
Listing
User
C51
AX51
LX51 Locate
LX51 Misc
Debug
Use Memory Layout from Target Dialog
Reserve
C classes
XDATA (X:0x100-X:0x4FF), HDATA (X:0x100-X:0x4FF), CODE (C:0x0-C:0x6FFF), CONST (C:
ECODE (C:0x0-C:0x6FFF), HCONST (C:0x0-C:0x6FFF))
User

3. Build Project

3.1 Select Project / Rebuild all target files

As below figure, choose “**Rebuild all target files**” from the “**Project**” tab.

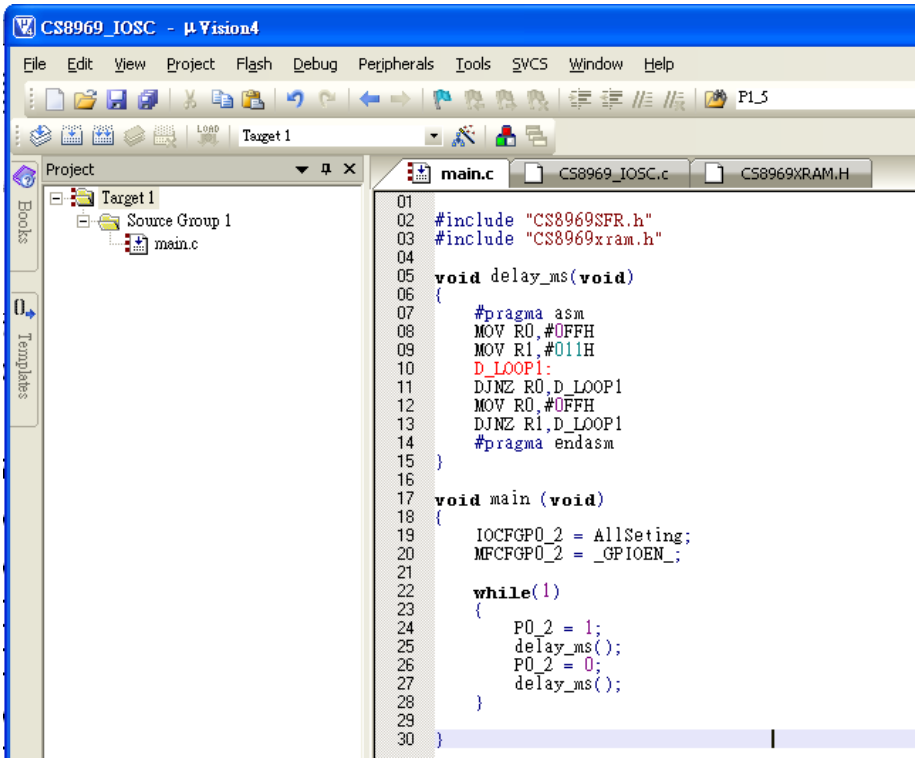
Build Output window explains the build commands and how errors and warnings can be tracked.



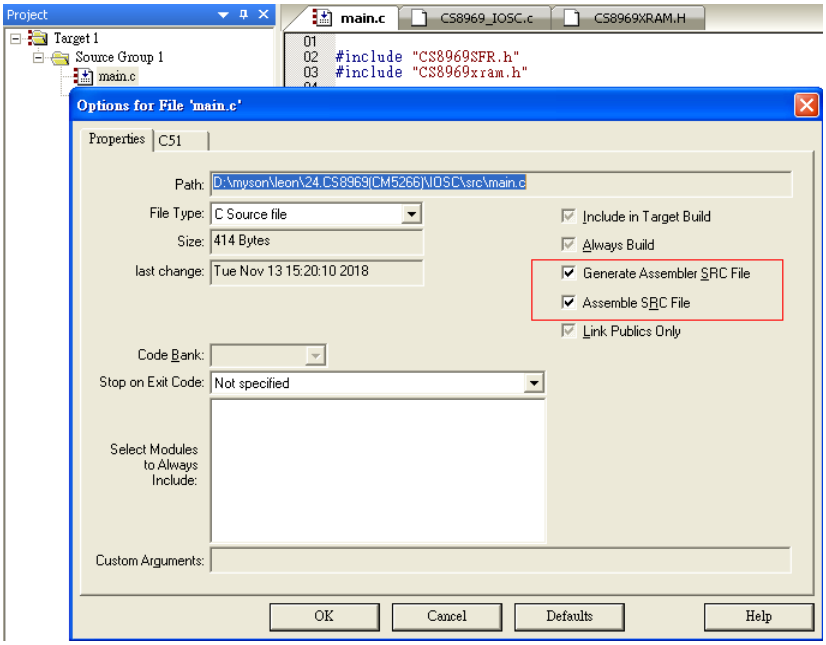
4. Tips and Tricks

4.1 Insert assembly code into C language

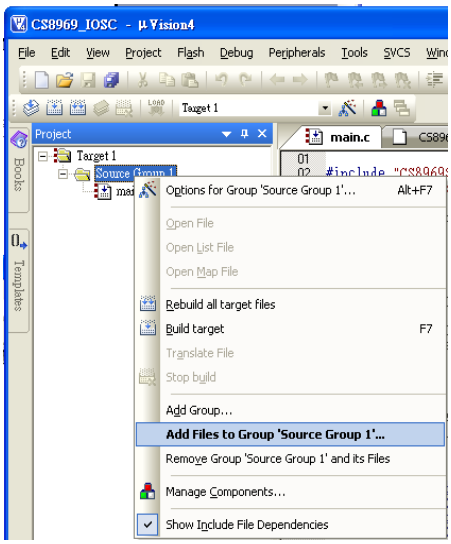
The user can insert assemble code into C language, but it won't succeed unless assemble LIB is included.



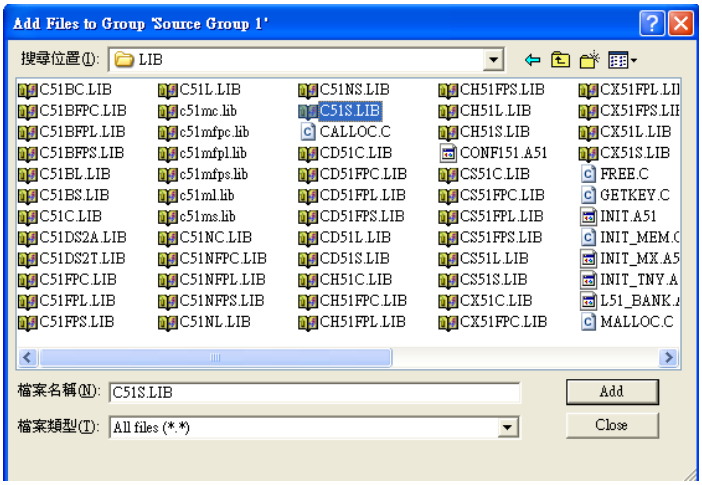
Choose main.c and click with mouse right-button. Then select Options for File 'xxxx.c' like main.c, and check the checkboxes "**Generate Assembler SRC File**" and "**Assemble SRC File**".



Include C51 Library by choosing "**Add Files to Group 'Source Group 1'"**.

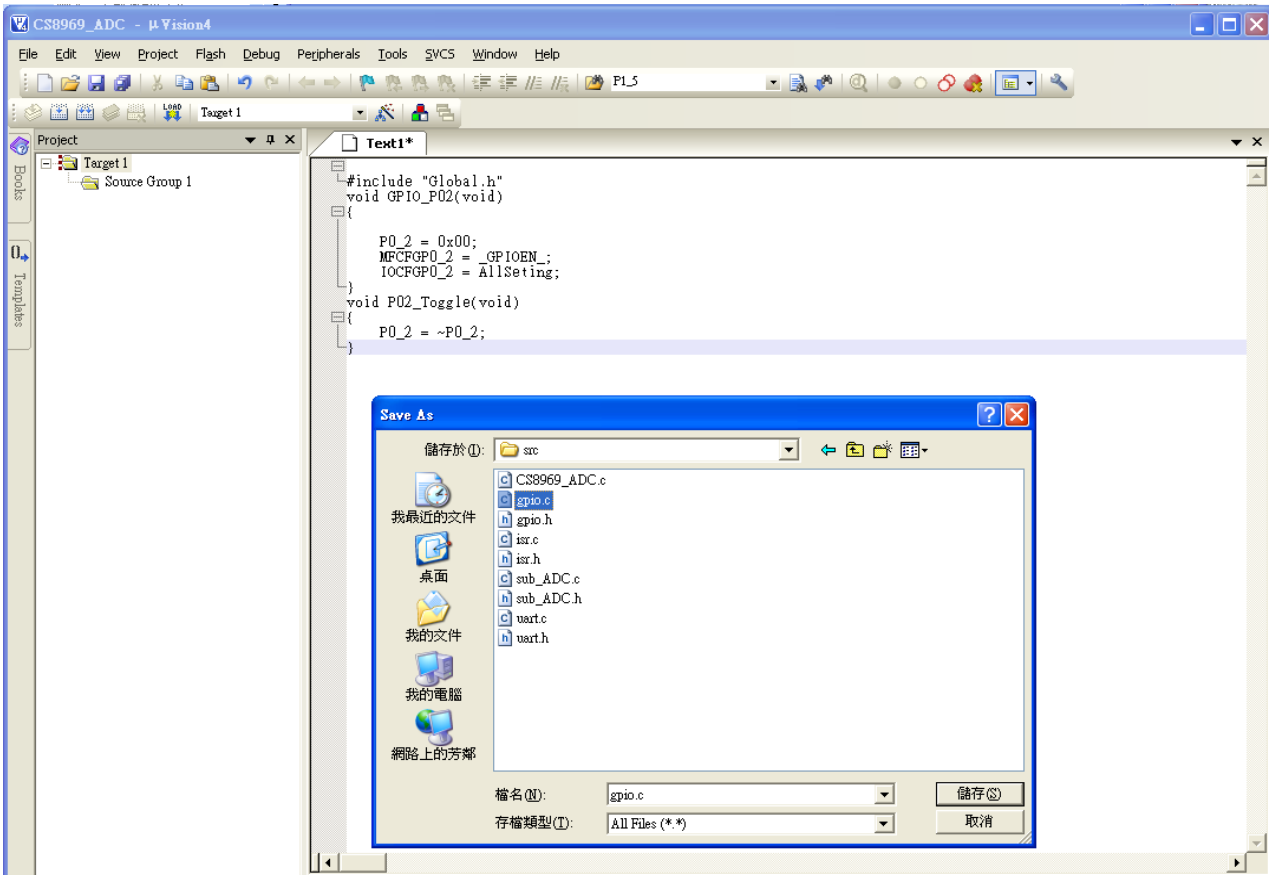


Include the example LIB C51S.LIB at folder C:\Keil\C51\Lib.

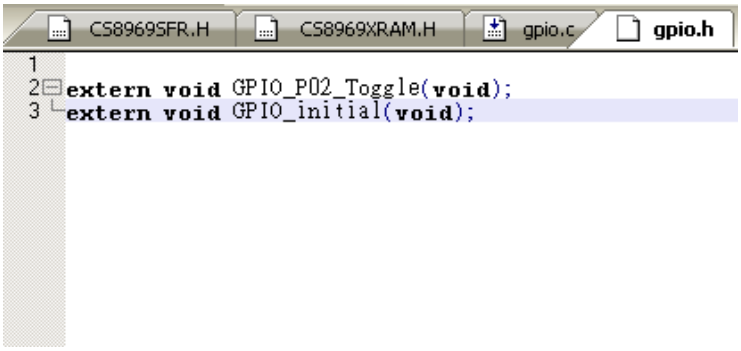


4.2 Creating Library file

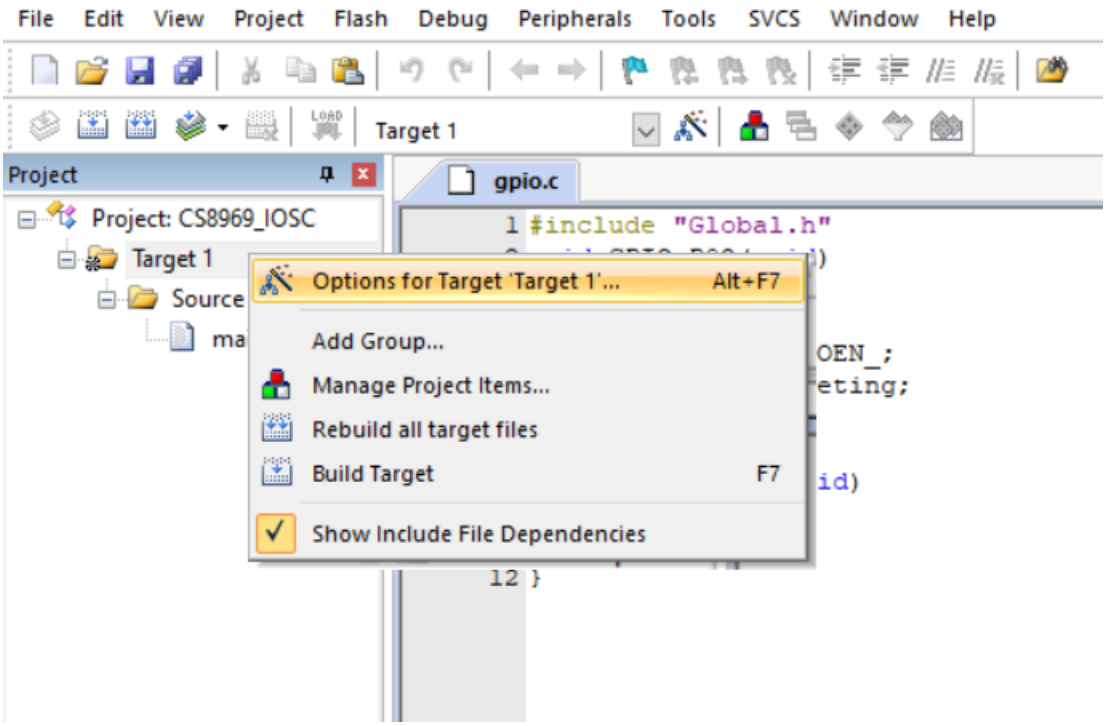
Create a new file and save as gpio.c



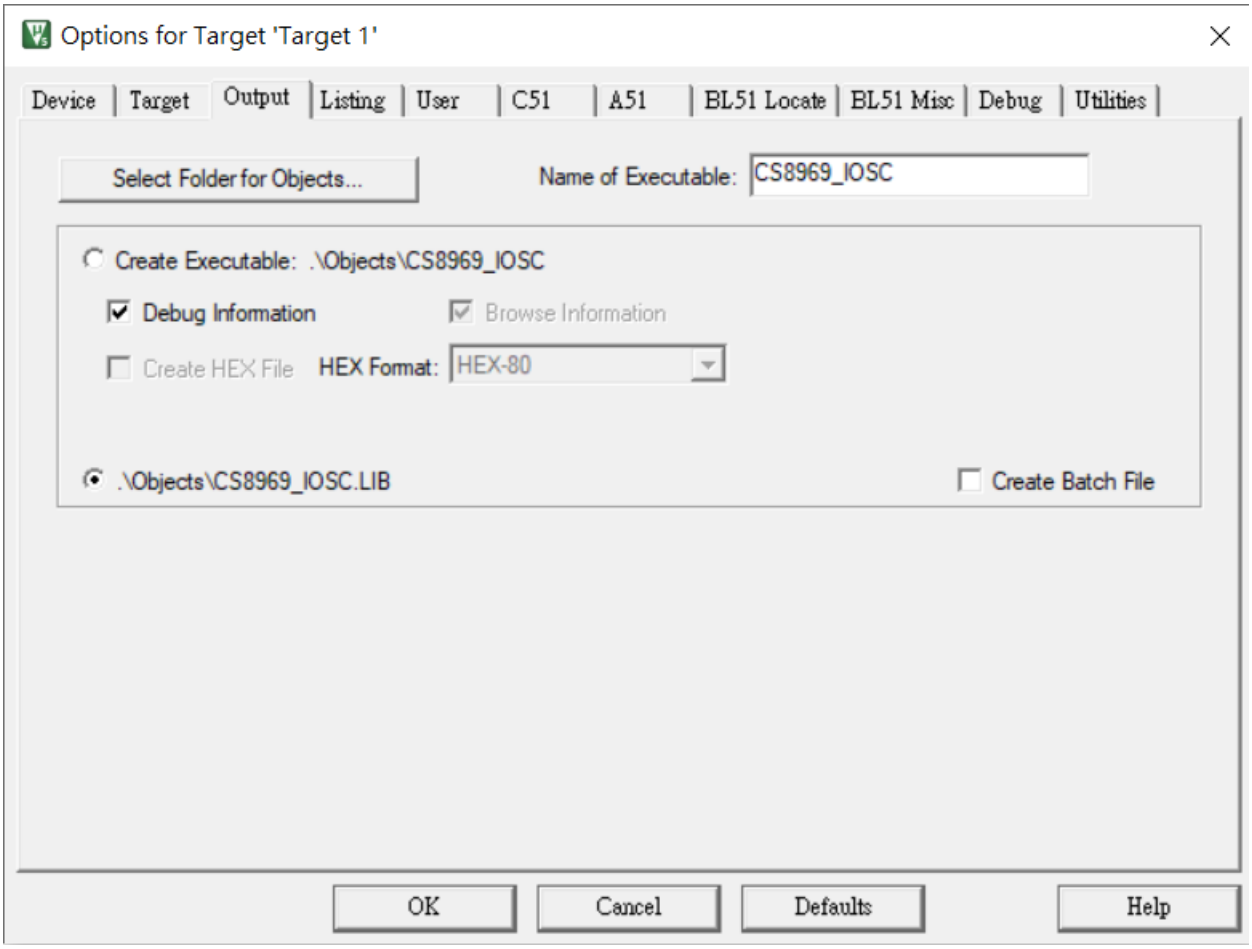
Create a new file and save as gpio.h



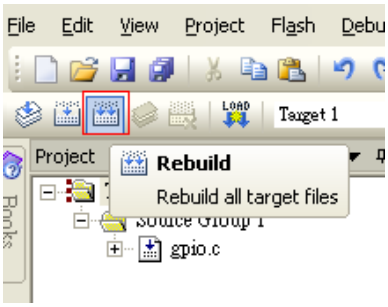
Select "**Options for Target - Target 1**".



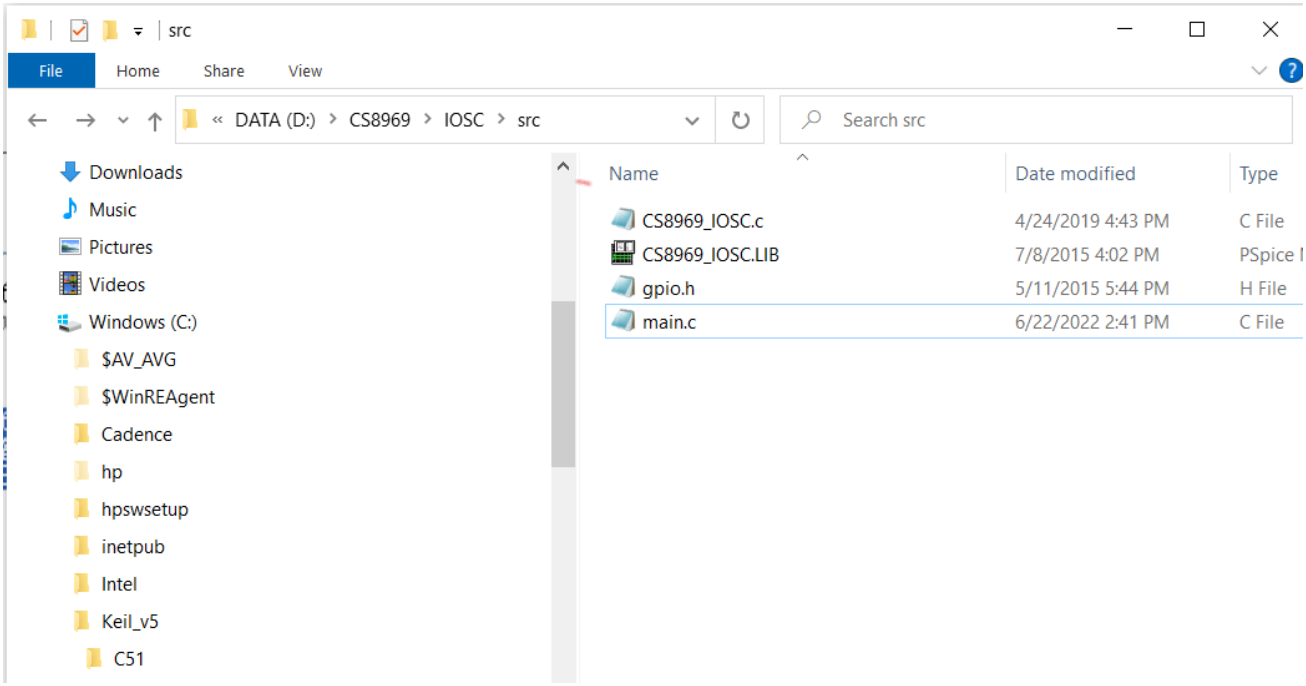
Choose the "**Output**" tab as below figure and choose to generate a CS8969_IOSC.lib. And press **OK**.



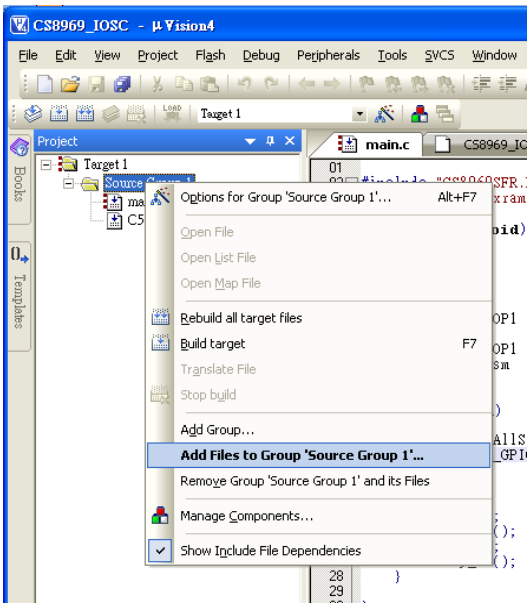
Press **Rebuild** and create Library

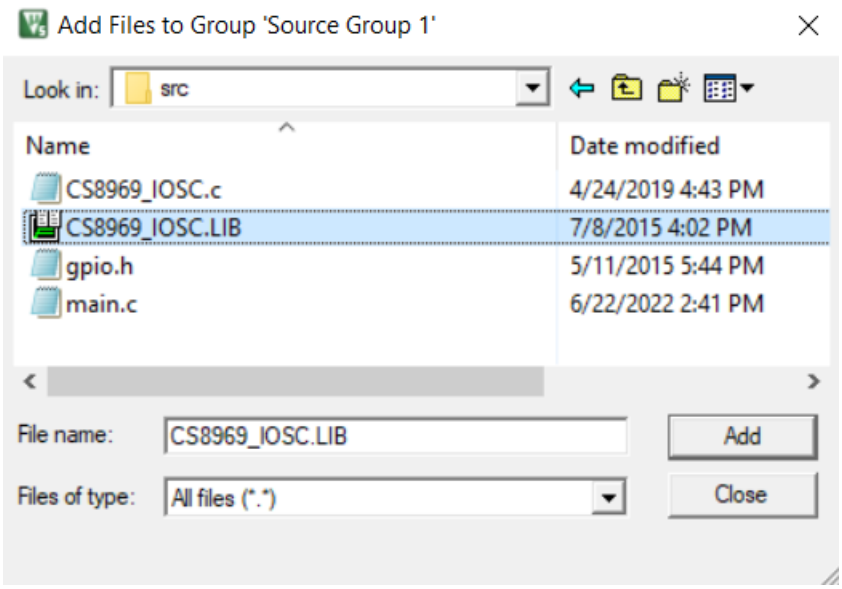


Copy Library file and head file gpio.h as a new project source file.

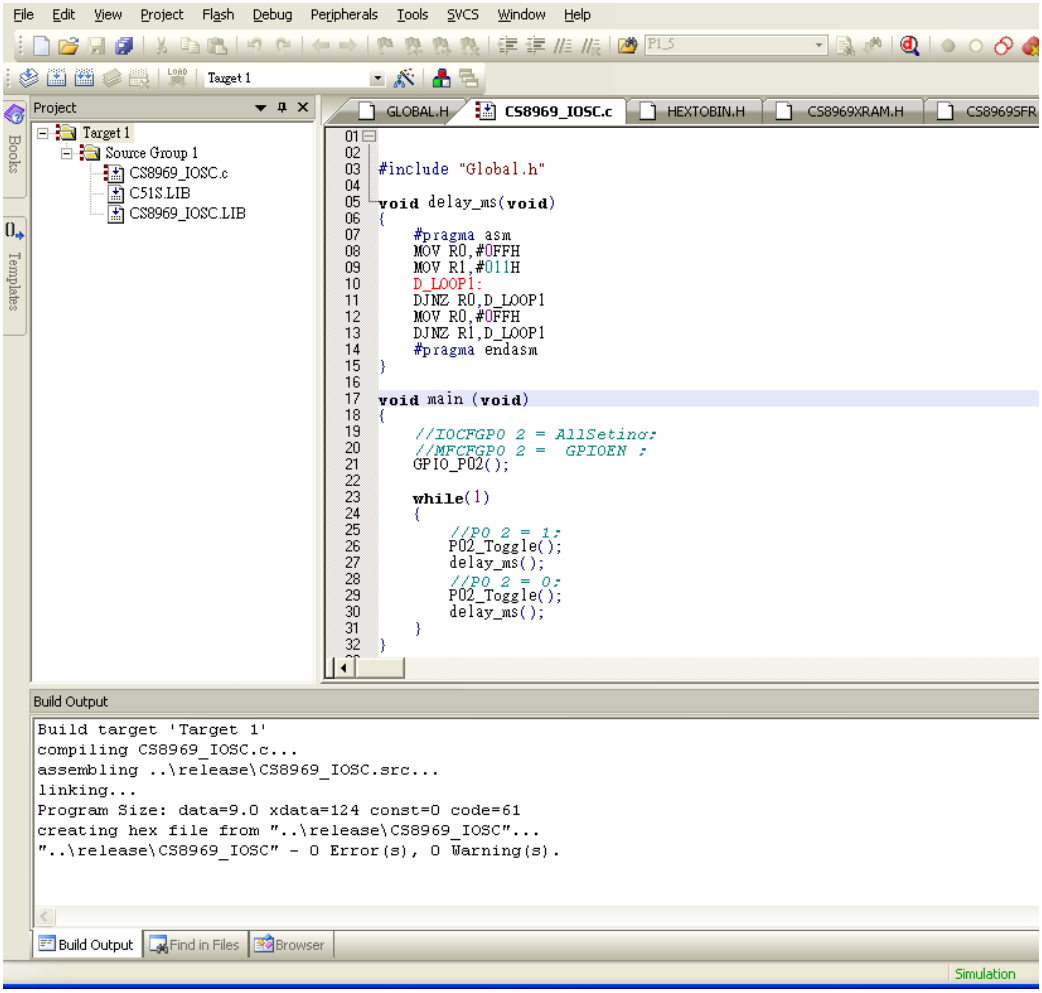


Add Library file and head file gpio.h to group Source Group1.





Press **Rebuild** and create Hex file.



REVISION HISTORY

Revision	Detailed Information	Date
A	First Formal Release	2022.06.22