

Semiconductor MCU Development Environment

This product supports the following chip series:

complete line	All Models
---------------	------------

- This manual uses the HC32L110 series as an example for illustration. If you have any questions, please feel free to contact us, the contact information is shown on the back cover.

table of contents

table of contents

1. Overview.....

3

2. Software Development.....

3

2.1 Tool Options

3

2.2 Get driver library and sample code.....

4

2.3 Opening Sample Projects with IAR Workbench

6

2.4 Opening a Sample Project with the Keil uVision IDE

8

2.5 Build your own project using templates

10

2.6 Frequently Asked Questions

12

3. Version Information & Contacts

14

1. summarize

This application note describes how to develop software in the Keil MDK and IAR Workbench environments using the sample projects provided by Siu Wah Semiconductor.

2. software development

2.1 Tool Options

Siu Wah Semiconductor MCUs are designed based on Cortex-M0+/M4 cores and can be developed under various third-party development environments. The official driver libraries and sample projects are based on the following two development tools:

- IAR Embedded Workbench for ARM
- Keil ARM RealView® Microcontroller Development System

The evaluation version and detailed usage information can be downloaded from their official website.

- <https://www.iar.com/iar-embedded-workbench/#!?architecture=Arm>
- <http://www2.keil.com/mdk5>

2.2 Get driver library and sample code

Siu Wah Semiconductor provides users with driver libraries and sample codes for each MCU model to support users to get started quickly and shorten product development time.

Users can download the required code from Siu Wah Semiconductor's official website, taking HC32L110C6PA-TSSOP20 as an example:

1.

Go to the official website of Siu Wah Semiconductor: <http://www.xhsc.com.cn>
2.

Click on "Ultra Low Power MCU" in "Product Lineup".

产品系列



超低功耗MCU



通用类MCU



电机类MCU



车规MCU

3.

Click to go to "HC32L110C6PA-TSSOP20"

产品型号	主频 (MHz)	内核	FLASH (KB)	RAM (KB)	EE (Byte)	GPIO	工作电压 (V)	DMA	低功耗 定时器	基本 定时器	通用 定时器	高级 定时器
HC32L110C6PA-TSSOP20	32	M0+	32	4	0	16+1	1.8 - 5.5	-	1	0	6	0
HC32L110C6PA-TSSOP20TR	32	M0+	32	4	0	16+1	1.8 - 5.5	-	1	0	6	0
HC32L110C6UA-SFN20TR	32	M0+	32	4	0	16+1	1.8 - 5.5	-	1	0	6	0

4. Select the "Development Tools" section to download driver libraries and samples, IDE support packages.

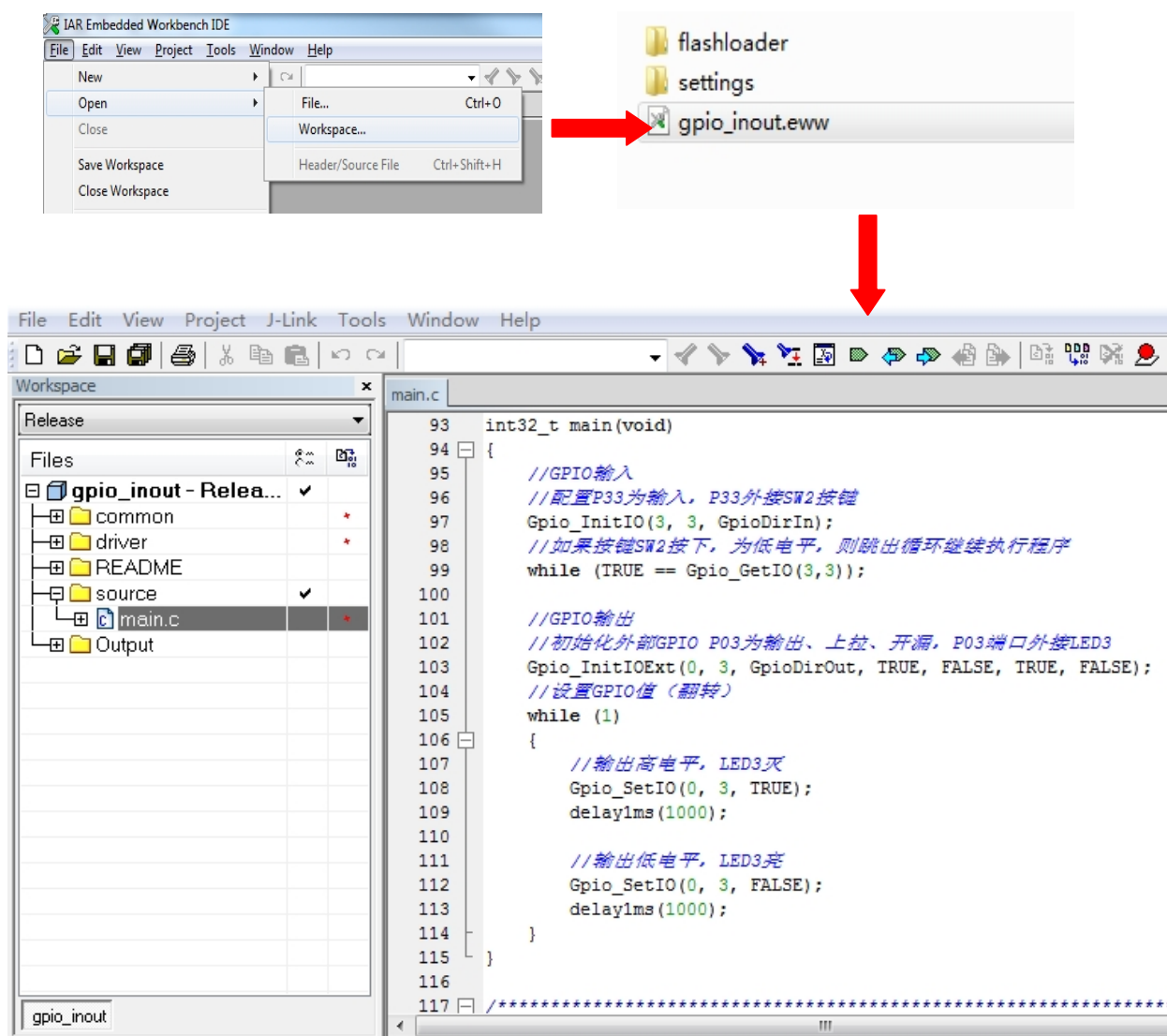
产品特点	技术文档	开发工具	应用方案
华大开发板			
STK-HC32L110_F003_005-TSSOP20 PDF BOM.zip			
		zip 2020-08-12	↓
STK-HC32L110_F003_005-TSSOP20设计文件.zip			
		zip 2020-08-12	↓
HC32L110_F003_005原理图库文件.zip			
		zip 2020-08-12	↓
驱动库及样例			
HC32L110_DDL_Rev1.1.4.zip			
		zip 2020-07-31	↓
HC32L110_TEMPLATE_Rev1.0.2.zip			
		zip 2020-07-31	↓
IDE支持包			
HC32L110_IDE_Rev1.0.3.zip			
		zip 2020-07-31	↓

2.3 Opening Sample Projects with IAR Workbench

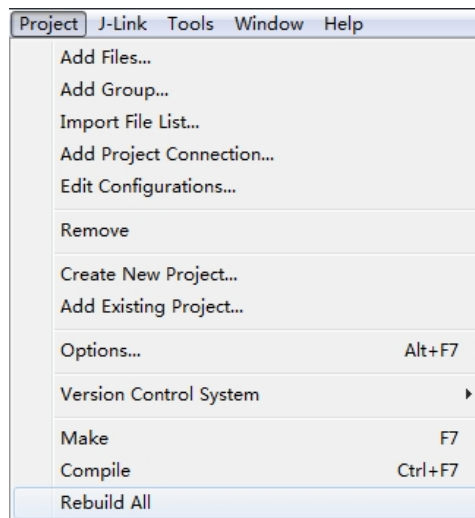
The following steps describe how to open, compile, run and debug the sample code in the IAR Workbench environment.

1. Extract the downloaded DDL
2. Open IAR Embedded Workbench IDE V7.70 (or later)
3. Click File->Open->Workspace to select gpio_inout.eww from the directory


<Storage directory>:\HC2L110_DDL_Rev1.1.4\example\gpio\gpio_inout\EWARM




- Click Project->Rebuild All to build the project.




- Configure the driver, power supply, etc. according to the corresponding user manual or quick manual of the corresponding development board, and make sure that there is no abnormality on the board after powering on the USB cable.

- Click  in the function menu or the shortcut key Ctrl+D to download the program



- Click  to start the program running



- Click  to stop the program from running

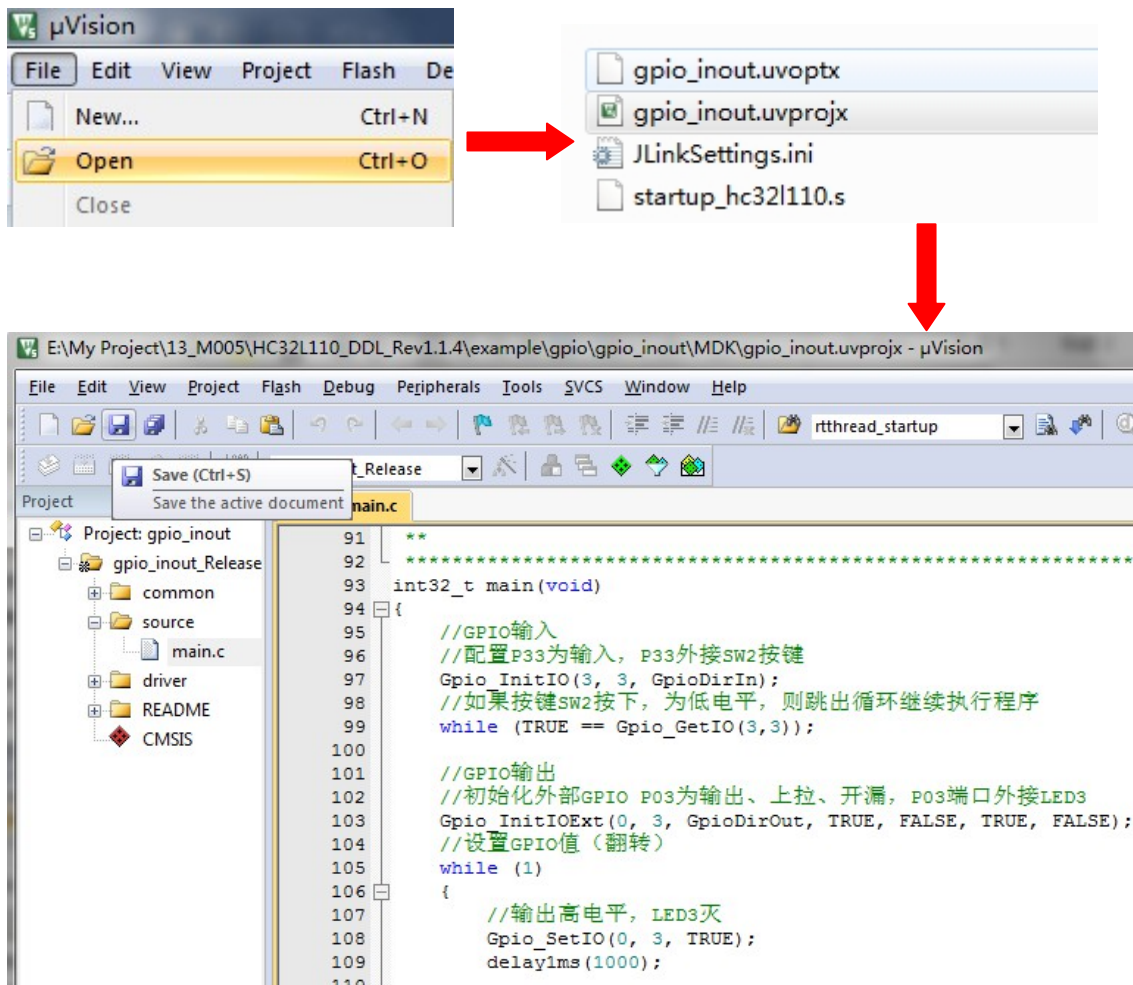


For more detailed information about IAR Workbench, please click on the Help section.

2.4 Opening a Sample Project with Keil uVision IDE

The following steps describe how to open, compile, run and debug the sample code in the Keil uVision IDE environment.

1. Extract the downloaded DDL
2. Open Keil uVision IDE v5.11a (or higher)



3. Click  to compile the project

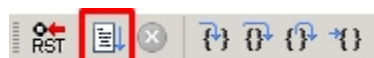



4. Configure the driver, power supply, etc. according to the corresponding user manual or quick manual of the corresponding development board, and make sure that there is no abnormality on the board after powering on the USB cable.

5. Click  to download the program



6. Click  to run the program



7. Click  to stop running the program



2.5 Build your own projects using templates

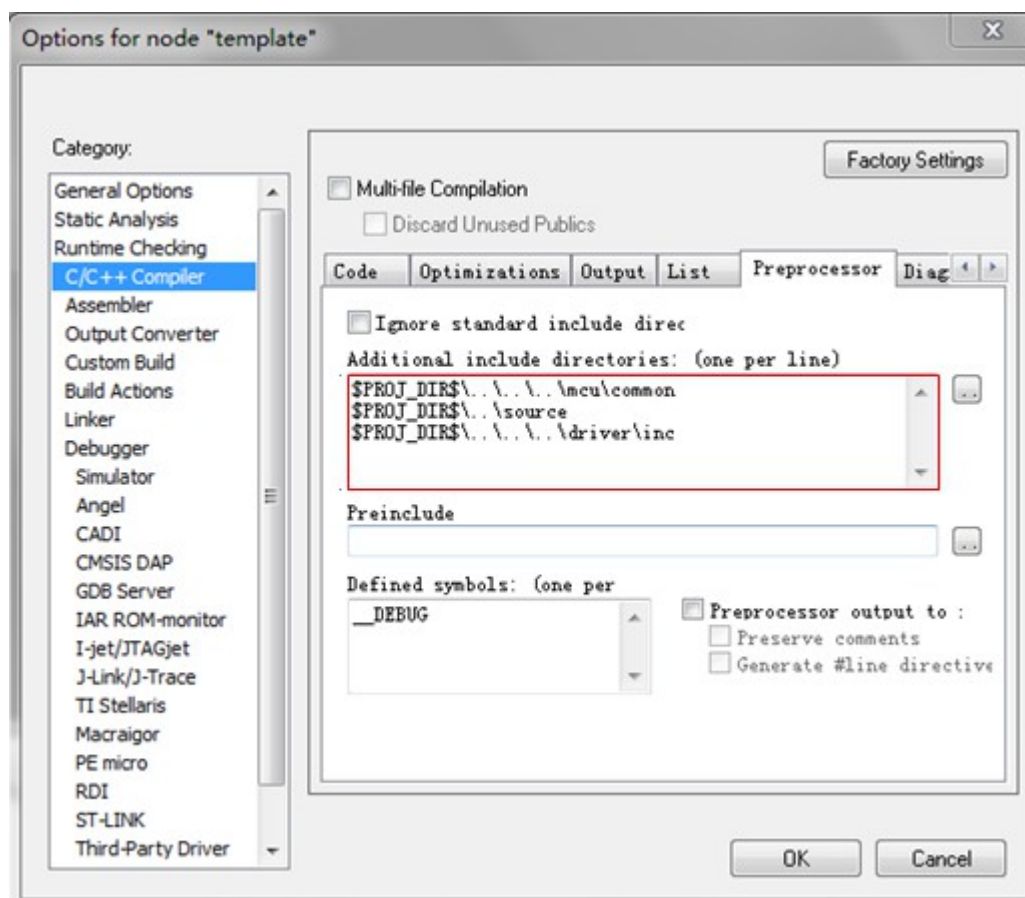
For the user to create a new project, **it is recommended to use the** template in the driver library provided by Siu Wah Semiconductor to modify and add user's own files.

template path:

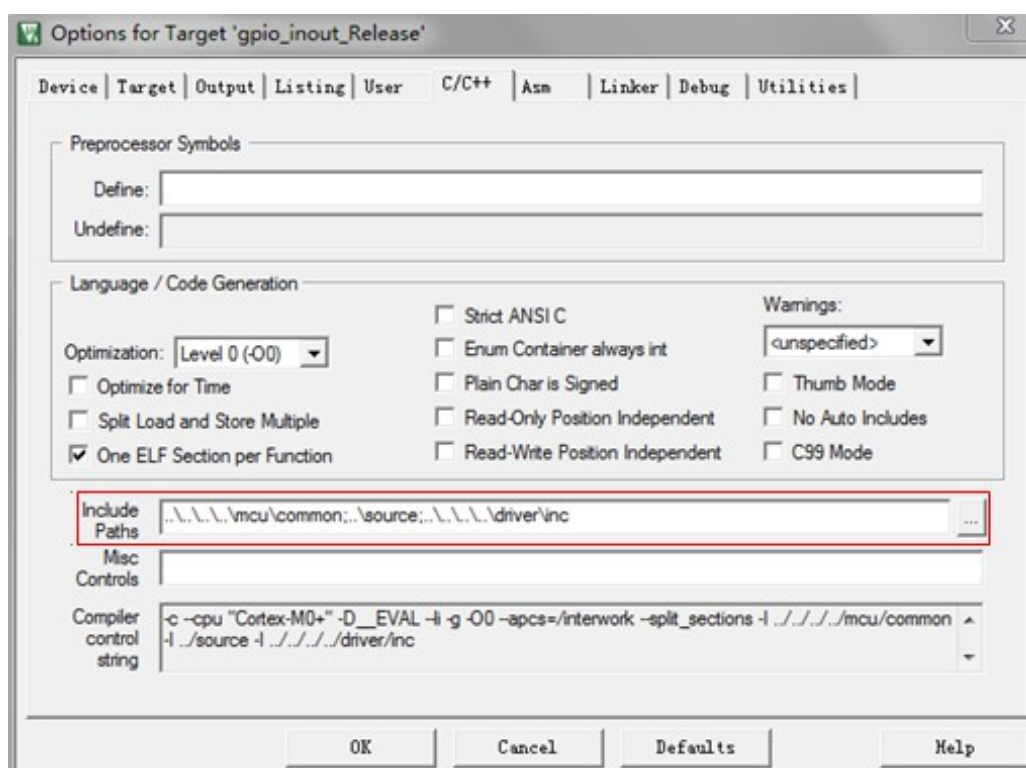
<Storage directory>: HC32L110_DDL_Rev1.1.4\example\template

It is important to note that the paths to the project's header files are set based on the file structure of the entire DDL, so if the user modifies template structure with other folders, the header file include path should be modified accordingly, otherwise it will compile with errors.

➤ IAR Workbench Engineering



➤ Keil uVision Engineering



If you really want to build a new project by yourself, you can consult the manual of the corresponding development environment. And download the IDE support package of the corresponding MCU.

2.6 common problems

1. Can't find

a chip

solution:

- Click 2.2 to download the "IDE Support Package", unzip it and copy it to the corresponding folder of the development tool.

- IAR Workbench

Copy each folder in IAR_IDE->config to the corresponding folder in IAR Workbench.

<save directory>: HC32L110_IDE_Rev1.0.3\HC32L110_IDE_Rev1.0.3\IAR_IDE\config

<Installation directory>: IAR Systems\Embedded Workbench 7.5\arm\config

- Keil uVision IDE

Click on the .pack file in the following file to install the

<save directory>: HC32L110_IDE_Rev1.0.3\HC32L110_IDE_Rev1.0.3\MDK_IDE

Please check the installation path when installing

<Keil installation path>: ARM\PACK

2. Can't find the .h file

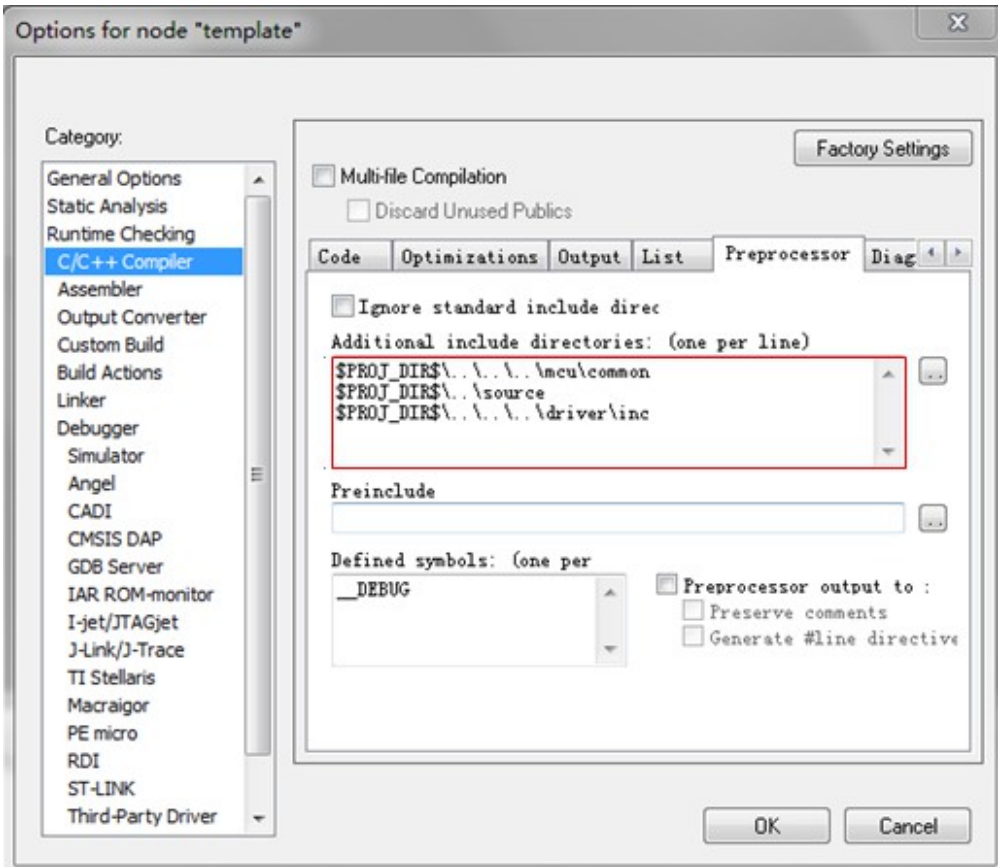
Missing or included paths

in the .h file lead to a

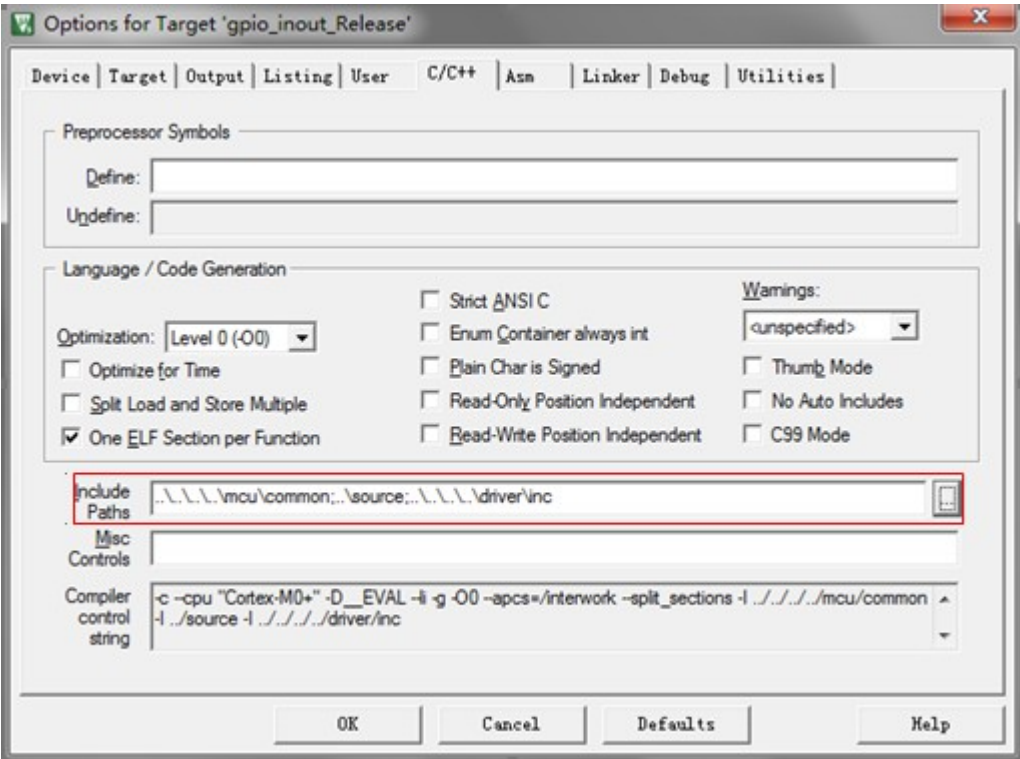
solution:

- Verify that the .h file exists and that it contains the correct path.

- IAR Workbench



➤ Keil uVision IDE



3. Version Information & Contacts

dates	releases	edit a record
2020/11/20	Rev1.0	First Edition Release.
2022/7/15	Rev1.1	Company logo updated.



If you have any comments or suggestions during the purchase and use,
please feel free to contact us.

Email: mcu@xhsc.com.cn

Website: <http://www.xhsc.com.cn>

Address: 10/F, Block A, No. 1867 Zhongke Road,
Pudong New Area, Shanghai, 201203, P.R. China.

