Table of Contents

How to make W7500 Keil Project 1
Introduction 1
STEP 1. Download and install KEIL5! 1
STEP 2. Download W7500 Library! 1
STEP 3. make workspace! and move the W7500 Library to workspace! 2
STEP 4. Execute KEIL5 and make new project! 2
STEP 5. W7500 start up code and system code setting! 4
STEP 6. setting for include paths 8
STEP 7. Memory setting! 10
STEP 8. Selection of Peripherals to use 13
STEP 9. Setting user program to use with the created bin file 14
STEP 10. Compile the example 15
..... 19

How to make W7500 Keil Project

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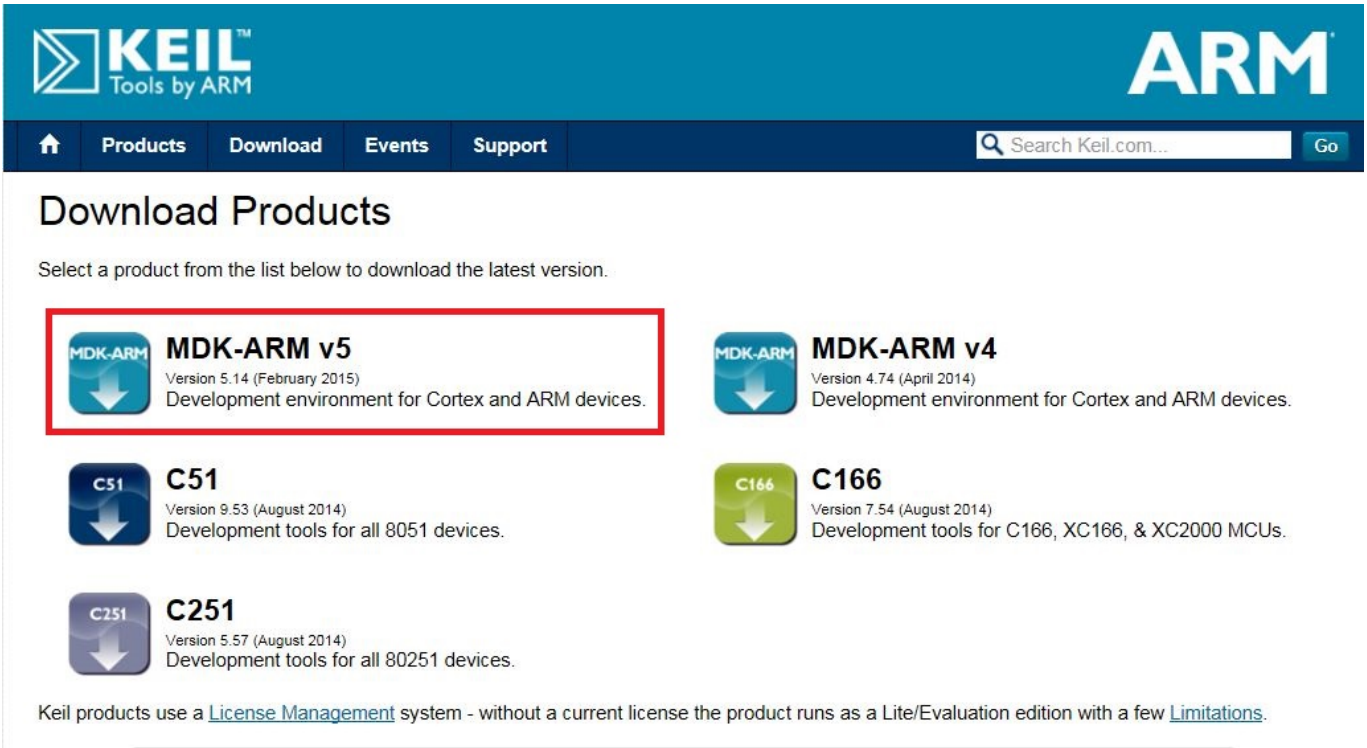
- author : IOP Team
- version : V1.0.0
- date : 1-May-2015
- brief : Description of making a new Keil Project of W7500.
- develop environment : Windows 7 32/64bits, Keil Version 5.10

Introduction

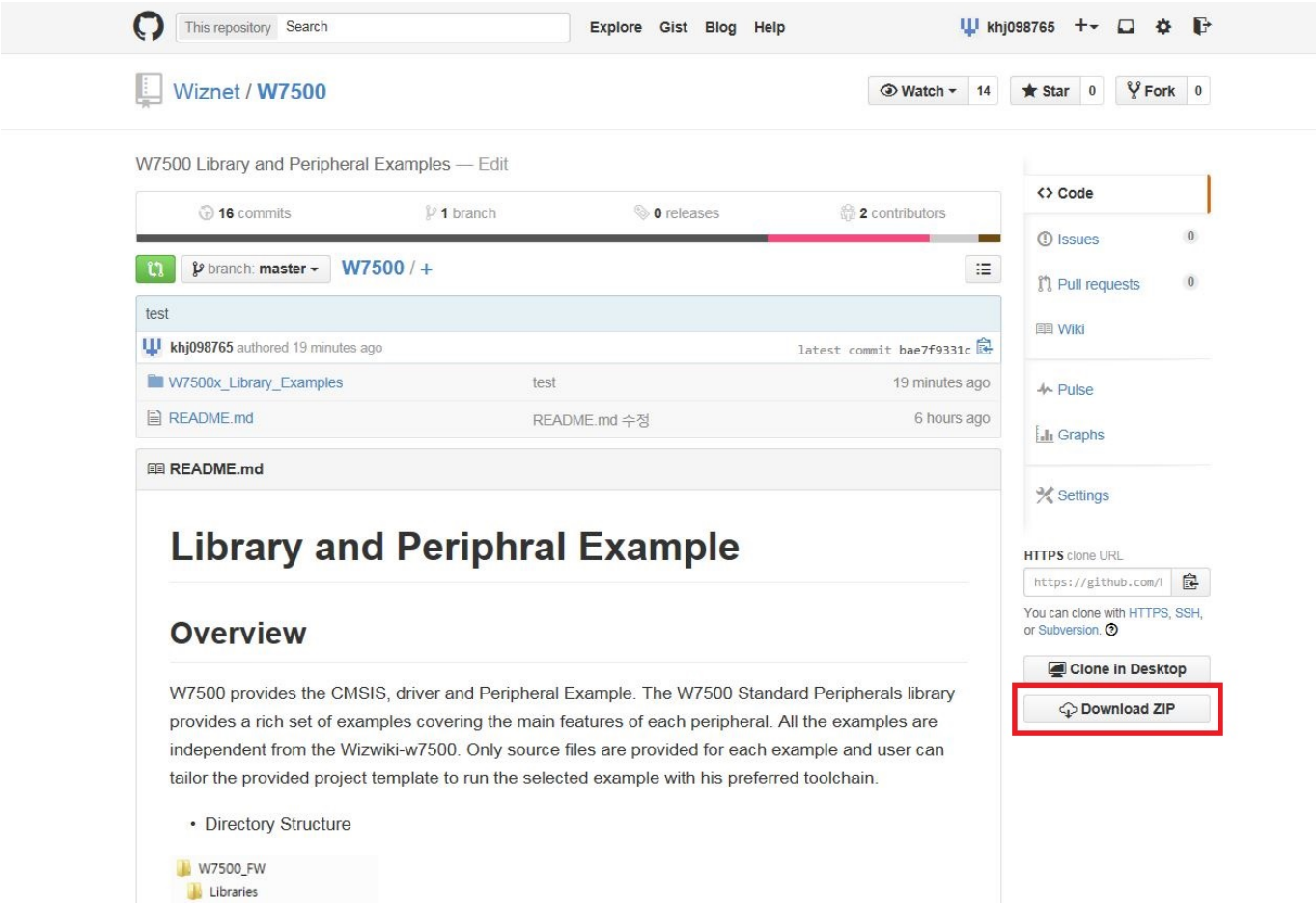
This application note is a tutorial for making a KEIL project for W7500 MCU. This document show you how to make a project and a bin file for W7500 step by step in order for you to follow up easily.

STEP 1. Download and install KEIL5!



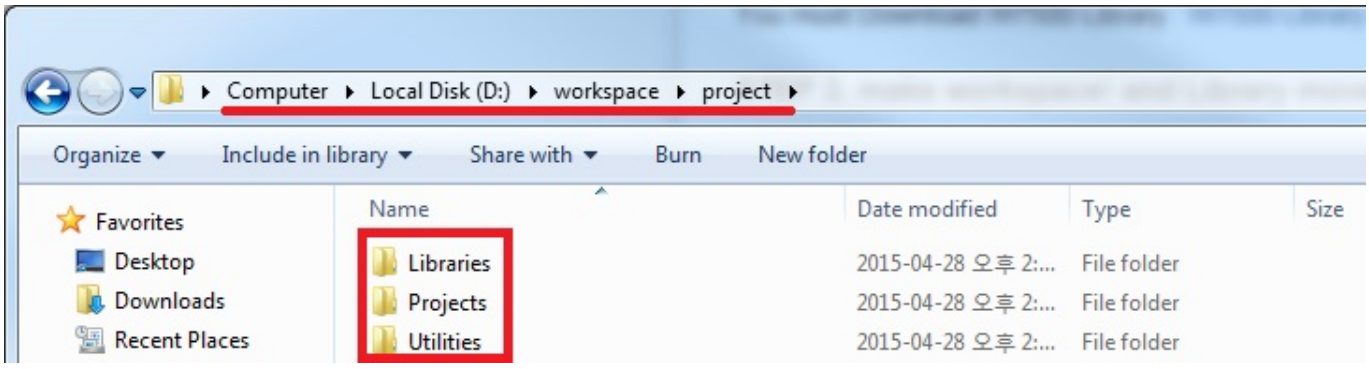
- Download MDK-ARM v5 : KEIL5
- Installation instructions, please see the Link : Install

STEP 2. Download W7500 Library!



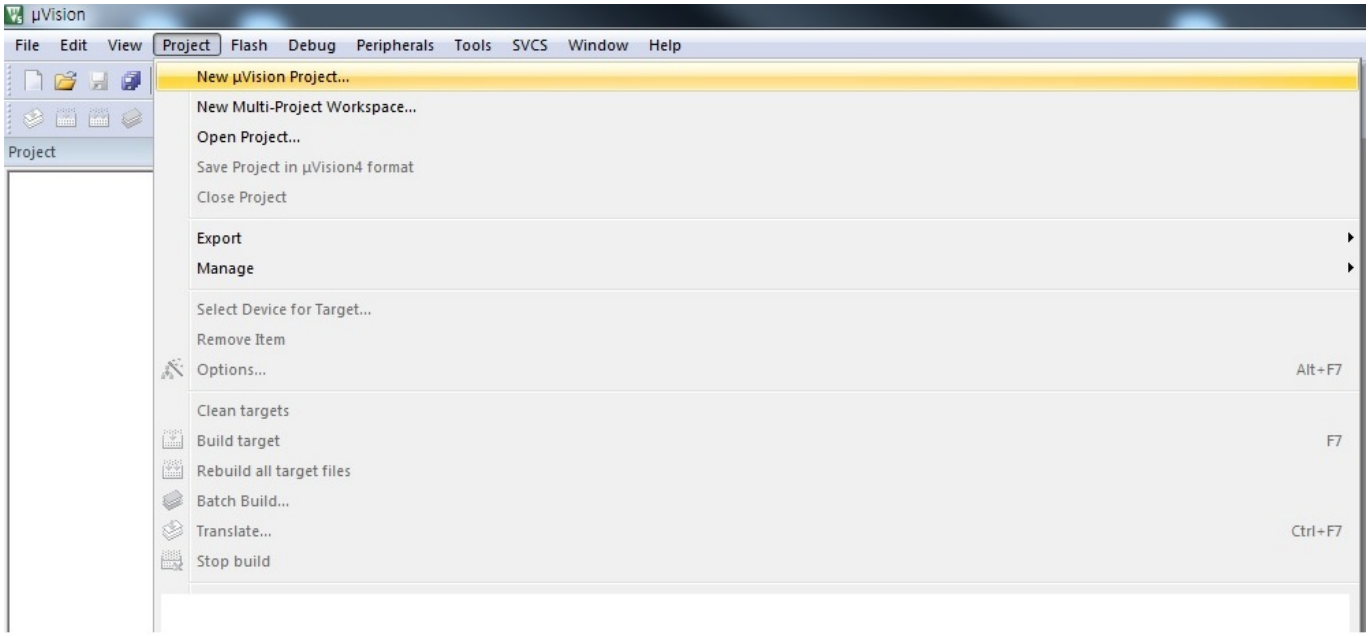
You can download W7500 Library from WIZnet's Github repository : W7500 Library

STEP 3. make workspace! and move the W7500 Library to workspace!

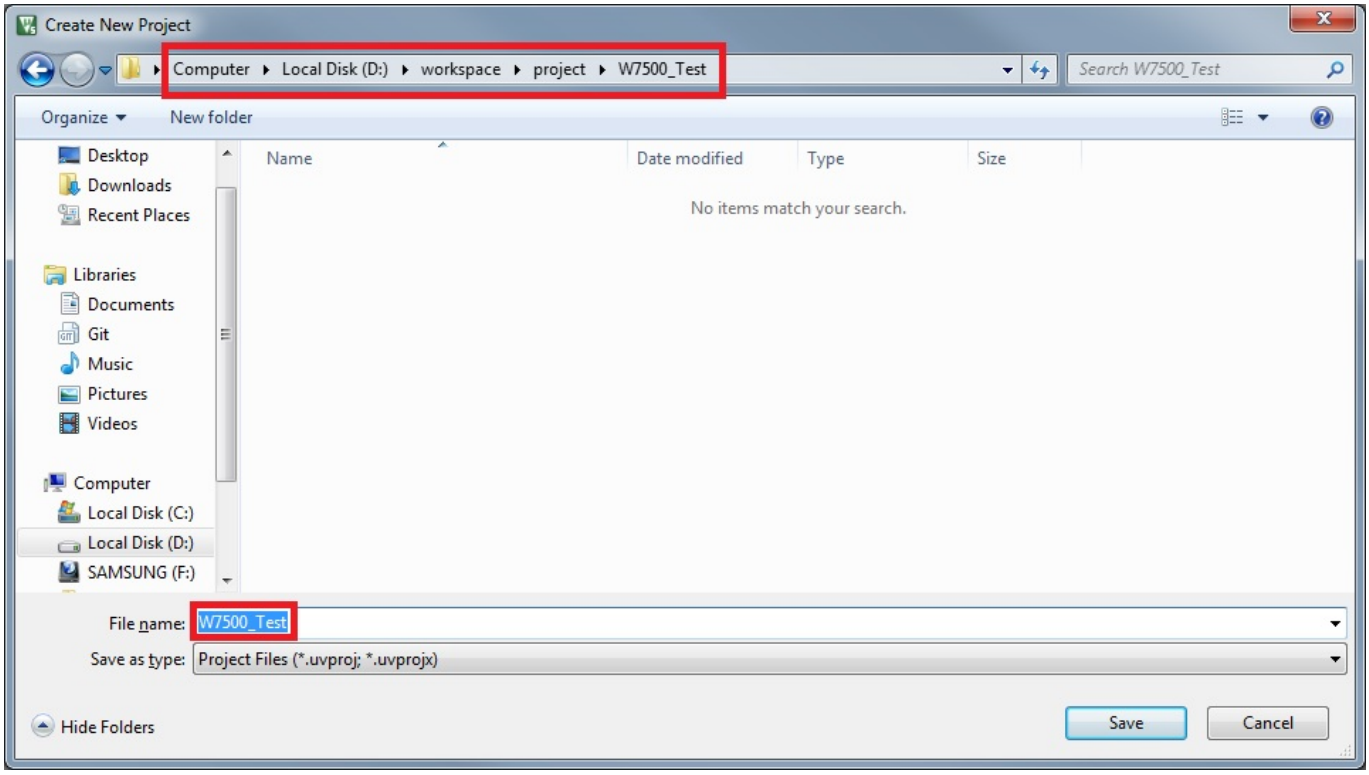


In this example, it is **D:\workspace\project\Library**

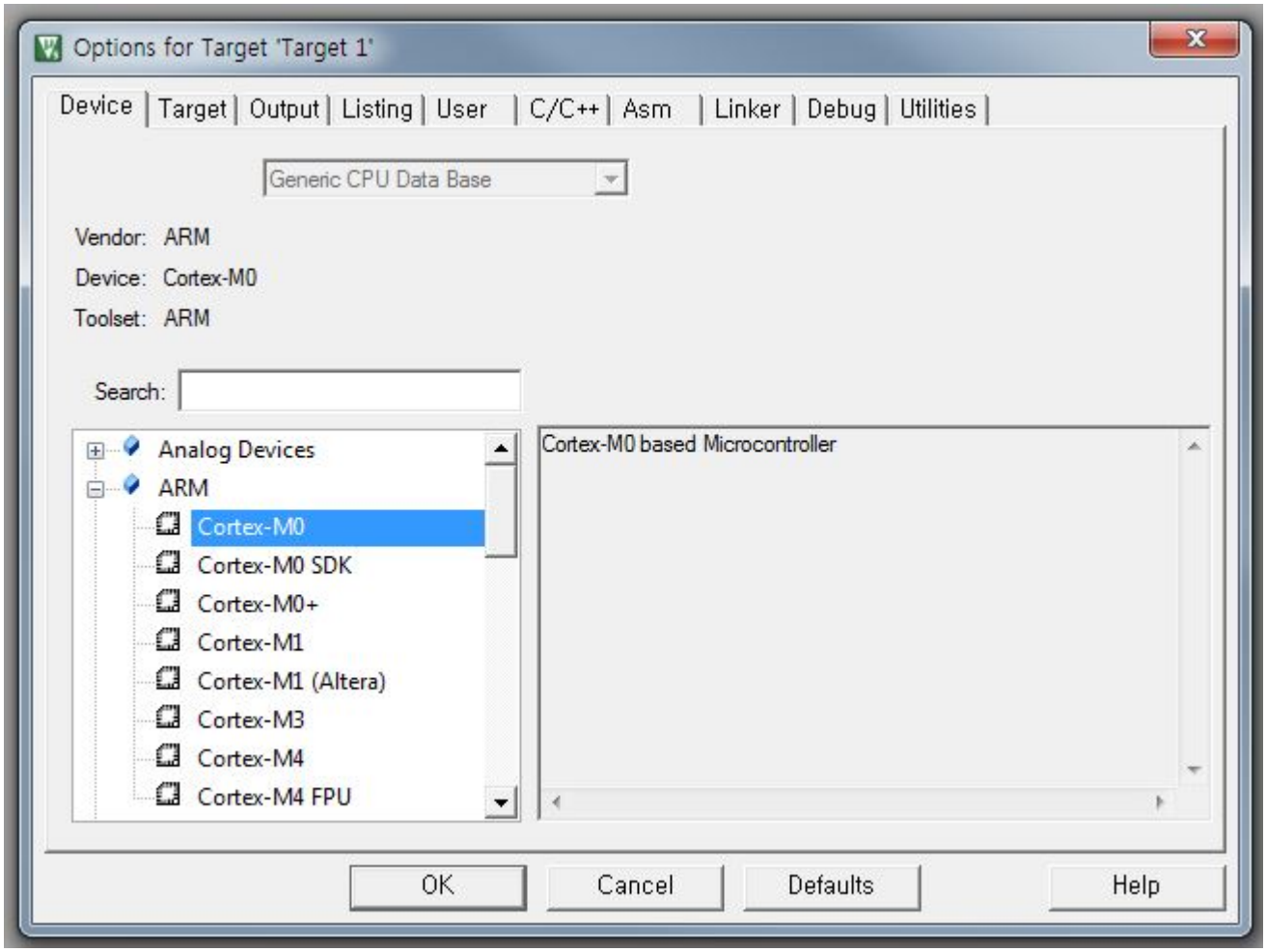
STEP 4. Execute KEIL5 and make new project!



Click to New uVision Project...

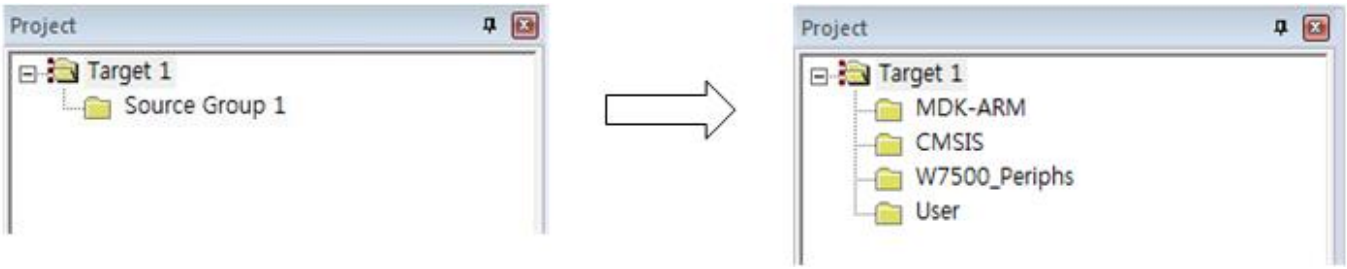


Select a project save folder and choose project name. In this example,
D:\workspace\project\W7500_test\W7500_Test.uvproj

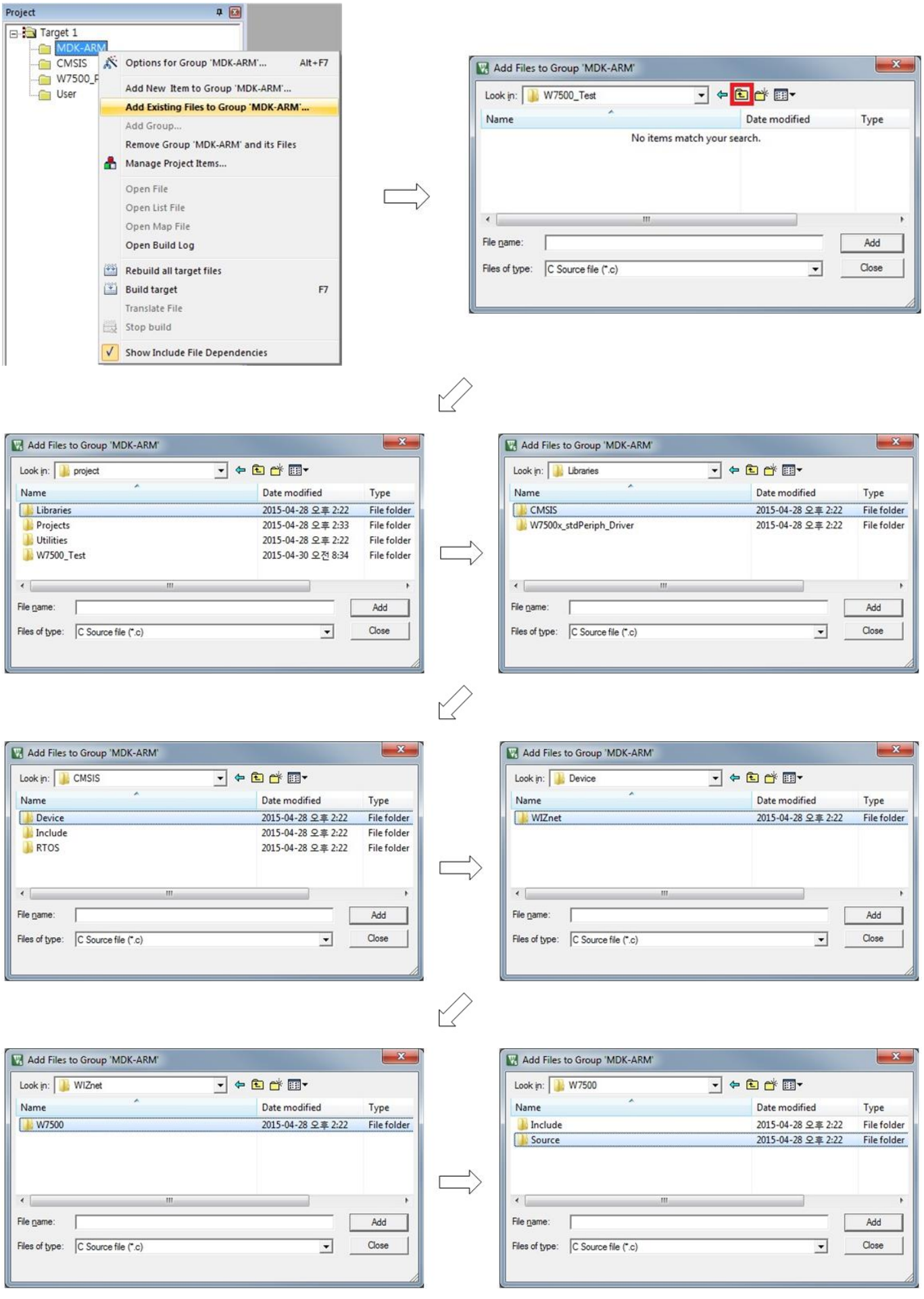


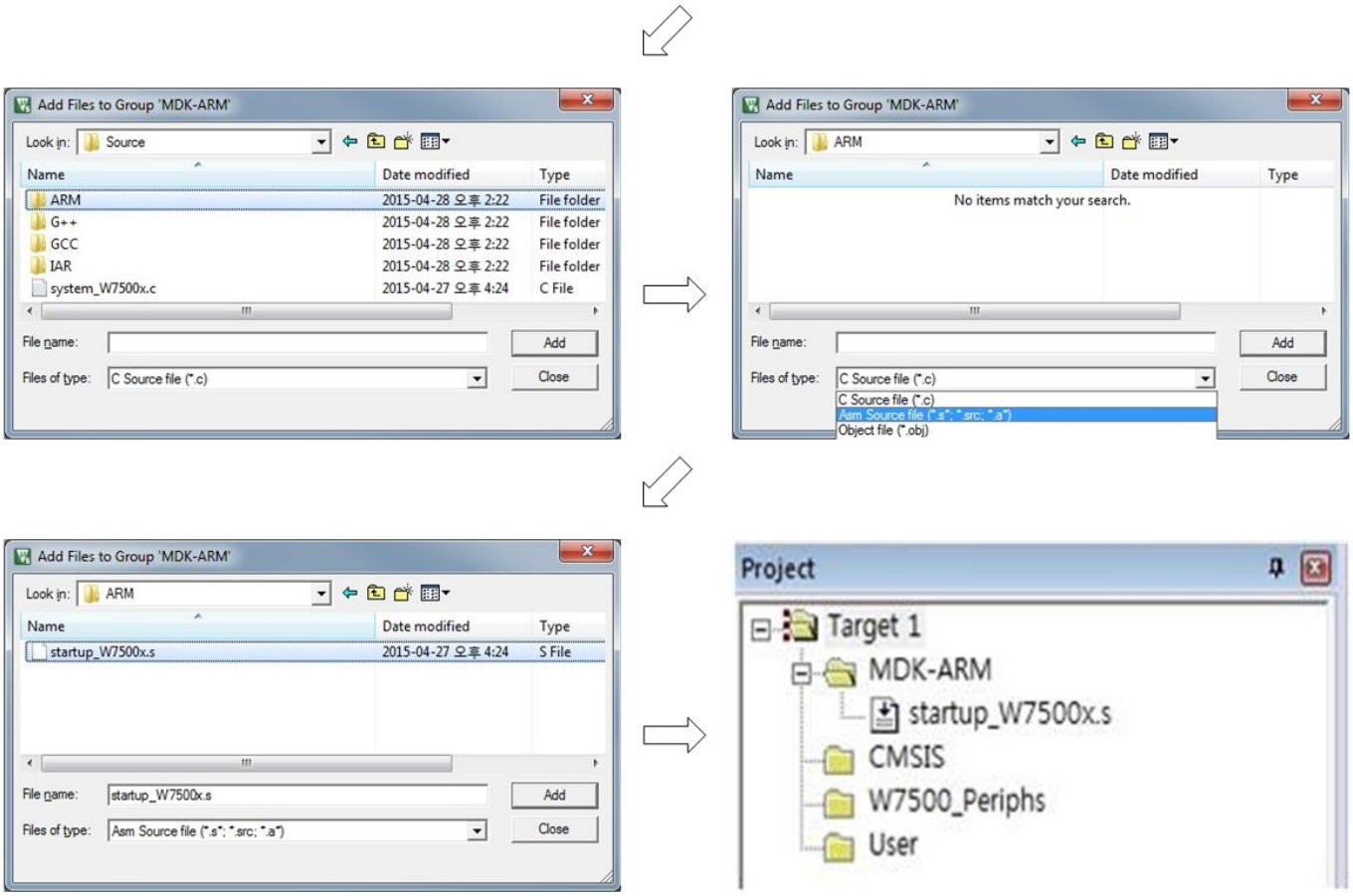
Choose 'Cortex-M0' because W7500 MCU is based on Cortex-M0

STEP 5. W7500 start up code and system code setting!

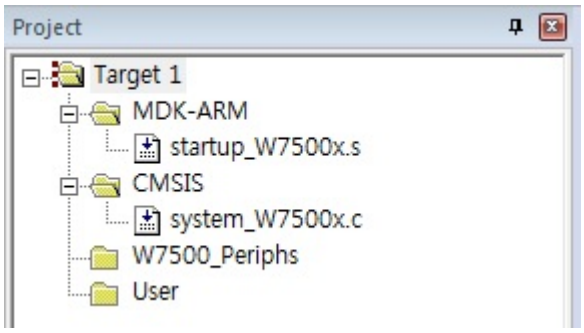


Return to project. You need to make the same folders like the image which is shown on right side


Project
Target 1
MDK-ARM
CMSIS
W7500_P
User
Options for Group 'MDK-ARM'... Alt+F7
Add New Item to Group 'MDK-ARM'...
Add Existing Files to Group 'MDK-ARM'...
Add Group...
Remove Group 'MDK-ARM' and its Files
Manage Project Items...
Open File
Open List File
Open Map File
Open Build Log
Rebuild all target files
Build target F7
Translate File
Stop build
Show Include File Dependencies
Add Files to Group 'MDK-ARM'
Look in: W7500_Test
Name
Date modified
Type
No items match your search.
File name:
Add
Files of type: C Source file (*.c)
Close
Look in: project
Libraries 2015-04-28 오후 2:22 File folder
Projects 2015-04-28 오후 2:33 File folder
Utilities 2015-04-28 오후 2:22 File folder
W7500_Test 2015-04-30 오전 8:34 File folder
Look in: Libraries
CMSIS 2015-04-28 오후 2:22 File folder
W7500x_stdPeriph_Driver 2015-04-28 오후 2:22 File folder
Look in: CMSIS
Device 2015-04-28 오후 2:22 File folder
Include 2015-04-28 오후 2:22 File folder
RTOS 2015-04-28 오후 2:22 File folder
Look in: Device
WIZnet 2015-04-28 오후 2:22 File folder
Look in: WIZnet
W7500 2015-04-28 오후 2:22 File folder
Look in: W7500
Include 2015-04-28 오후 2:22 File folder
Source 2015-04-28 오후 2:22 File folder



Follow like upper images.

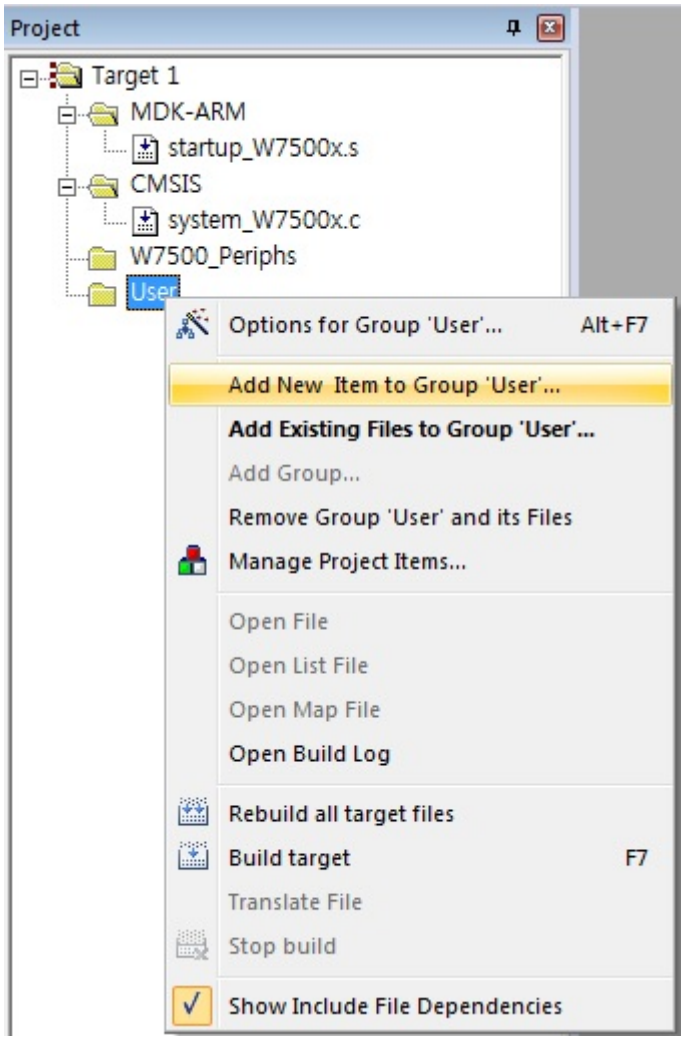


And in the same way... CMSIS Folder include D:\workspace\project\Libraries\CMSIS\Device\WIZnet\W7500\Source\system_W7500.c file

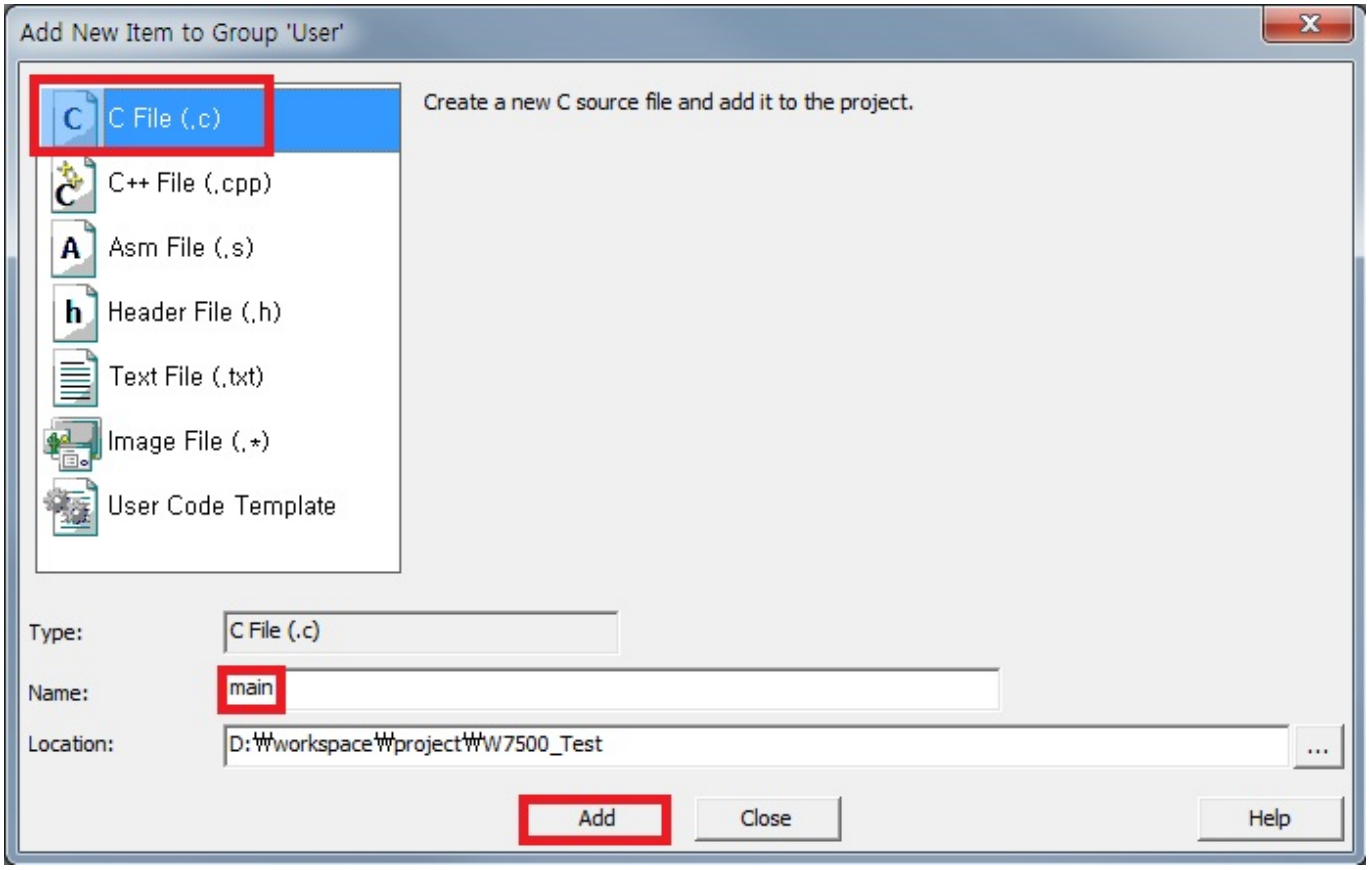
W7500_Periphs folder includes Peripherals to use.

And User folder has to include main.c and so on.

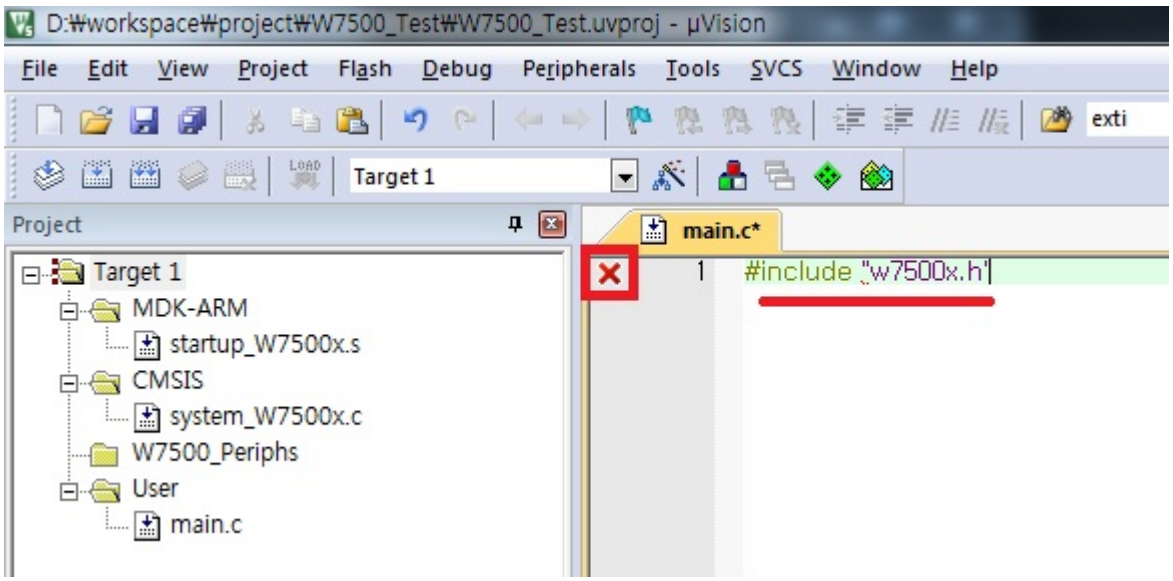
Let's make main.c



Click to Add New Item to the Group.

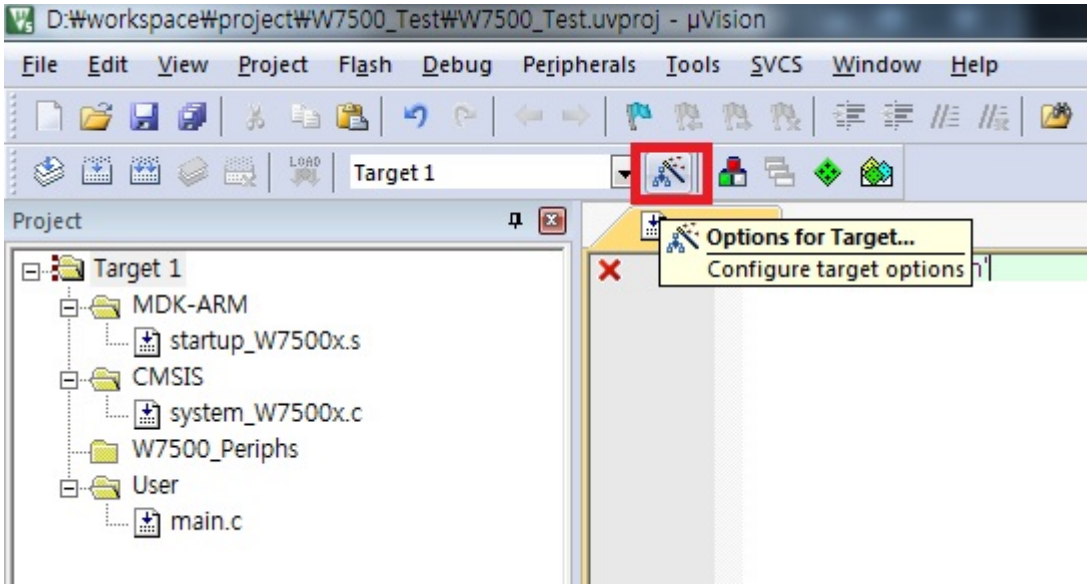


Select C file and Name it with 'main' and click 'Add'.

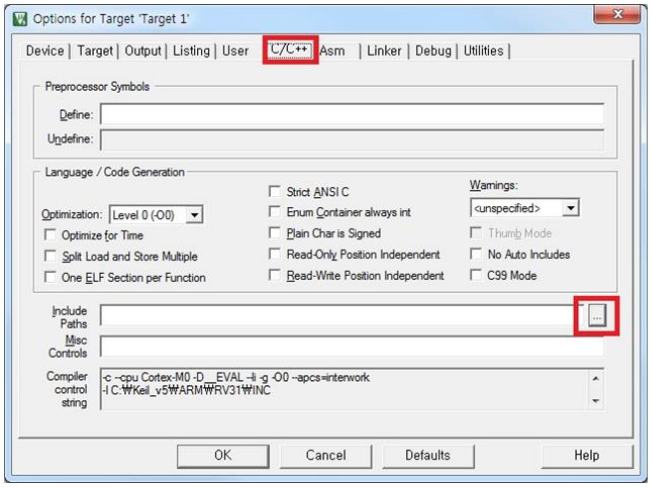


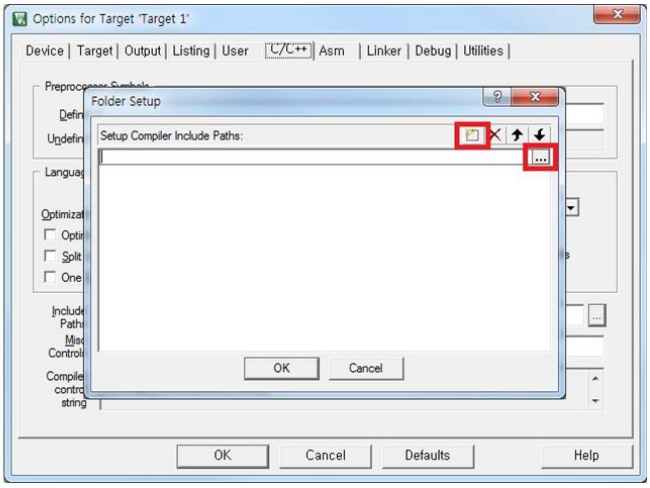
Include **w7500x.h** header but... you should show red X because you did not path.

STEP 6. setting for include paths

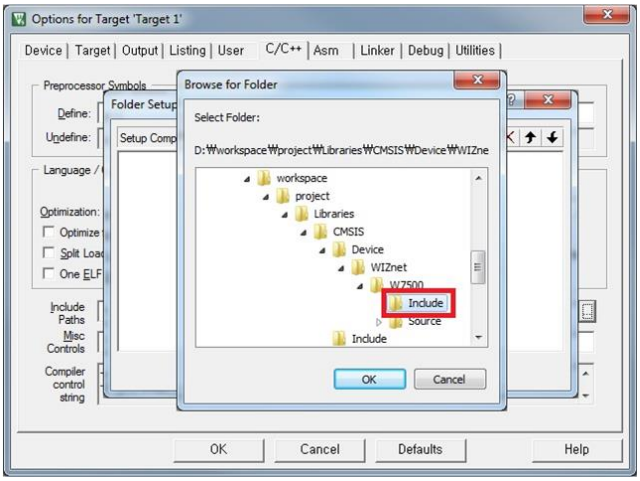


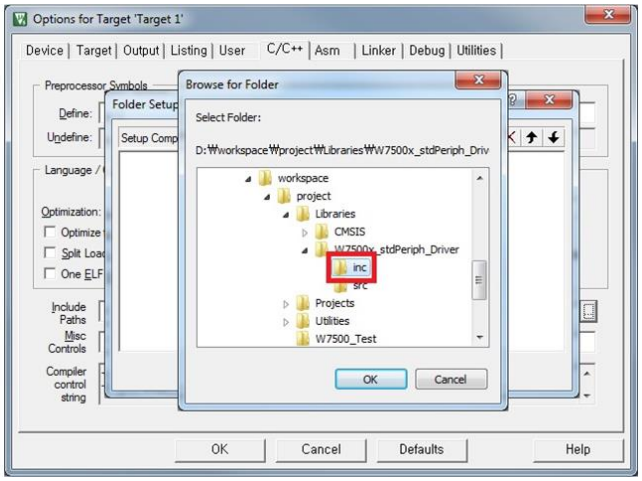
Click to Options for Target...

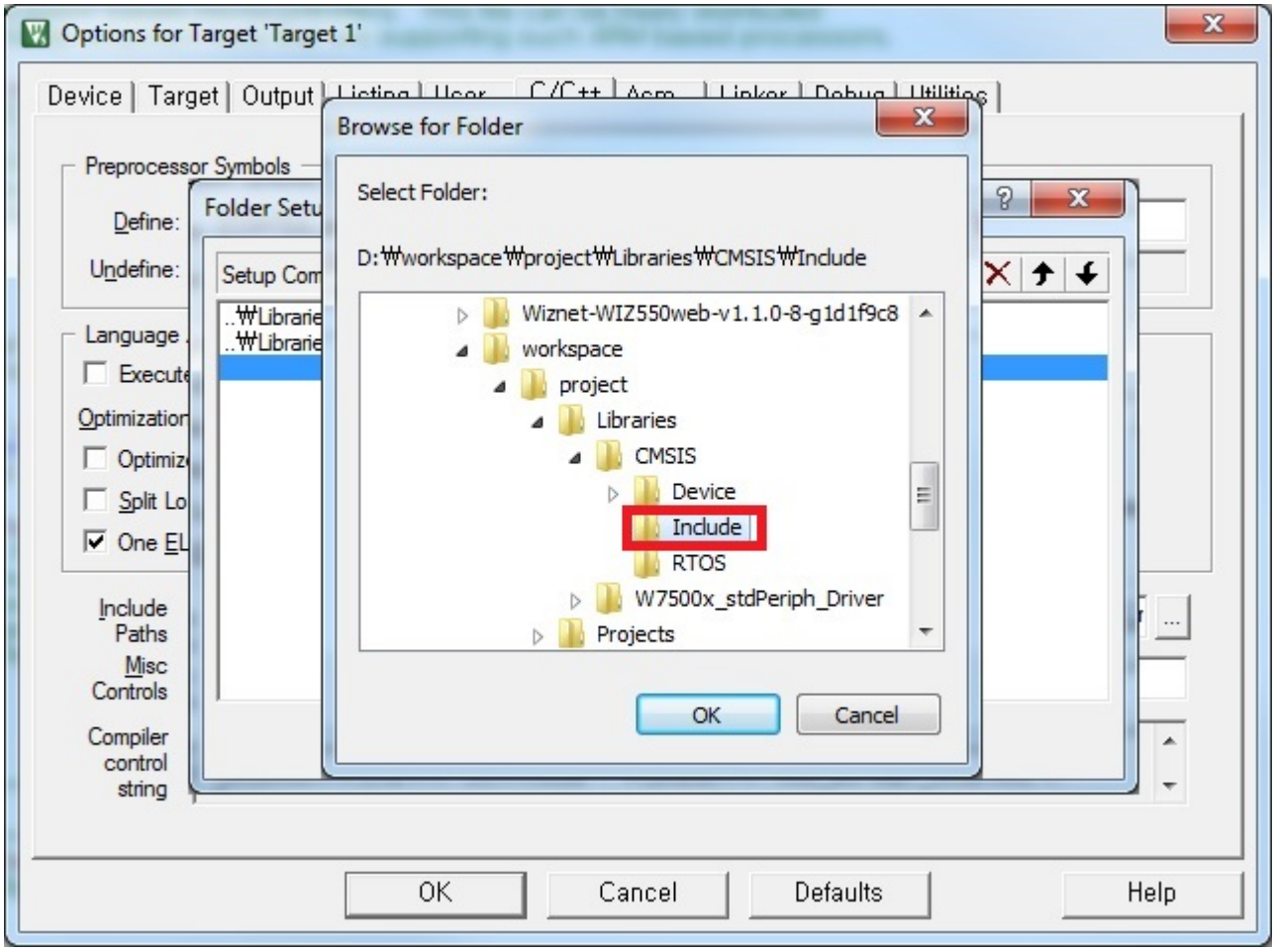




Select 'Include Paths' in C\C++ tap and click the folder icon and click to ... icon

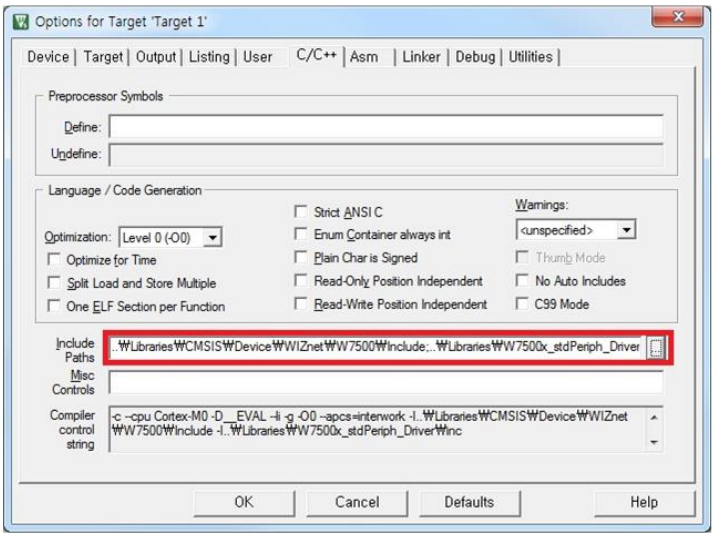


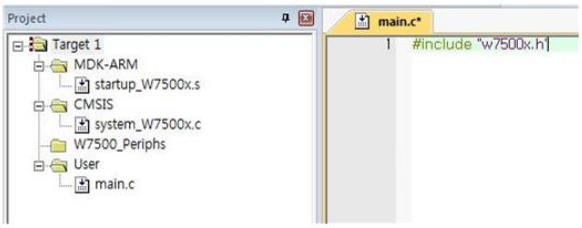




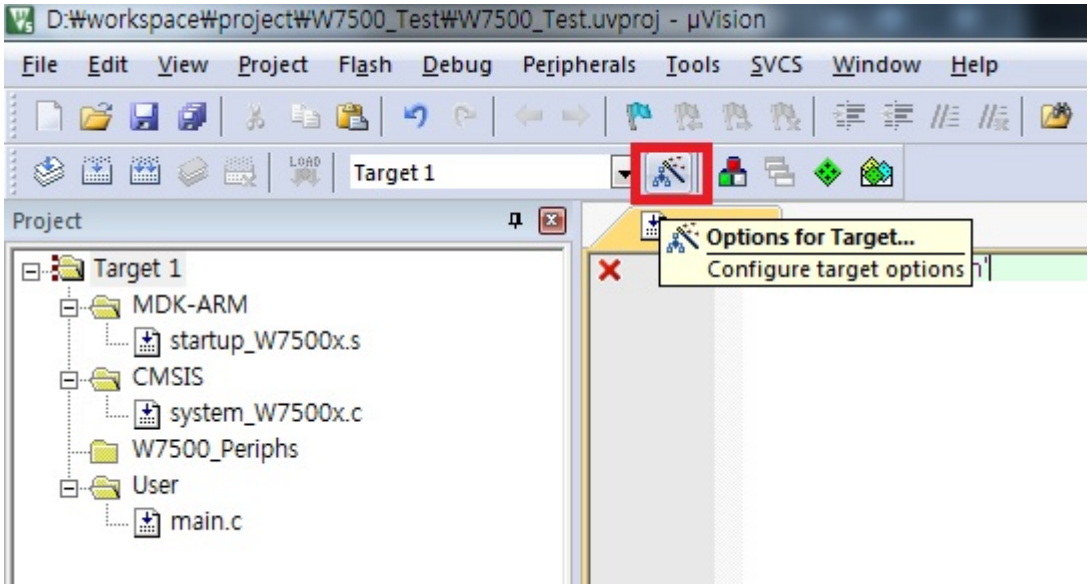
Set 'include path' with

D:\workspace\project\Libraries\CMSIS\Device\WIZnet\W7500\Include
D:\workspace\project\Libraries\W7500x_stdPeriph_Driver\inc
D:\workspace\project\Libraries\CMSIS\Include

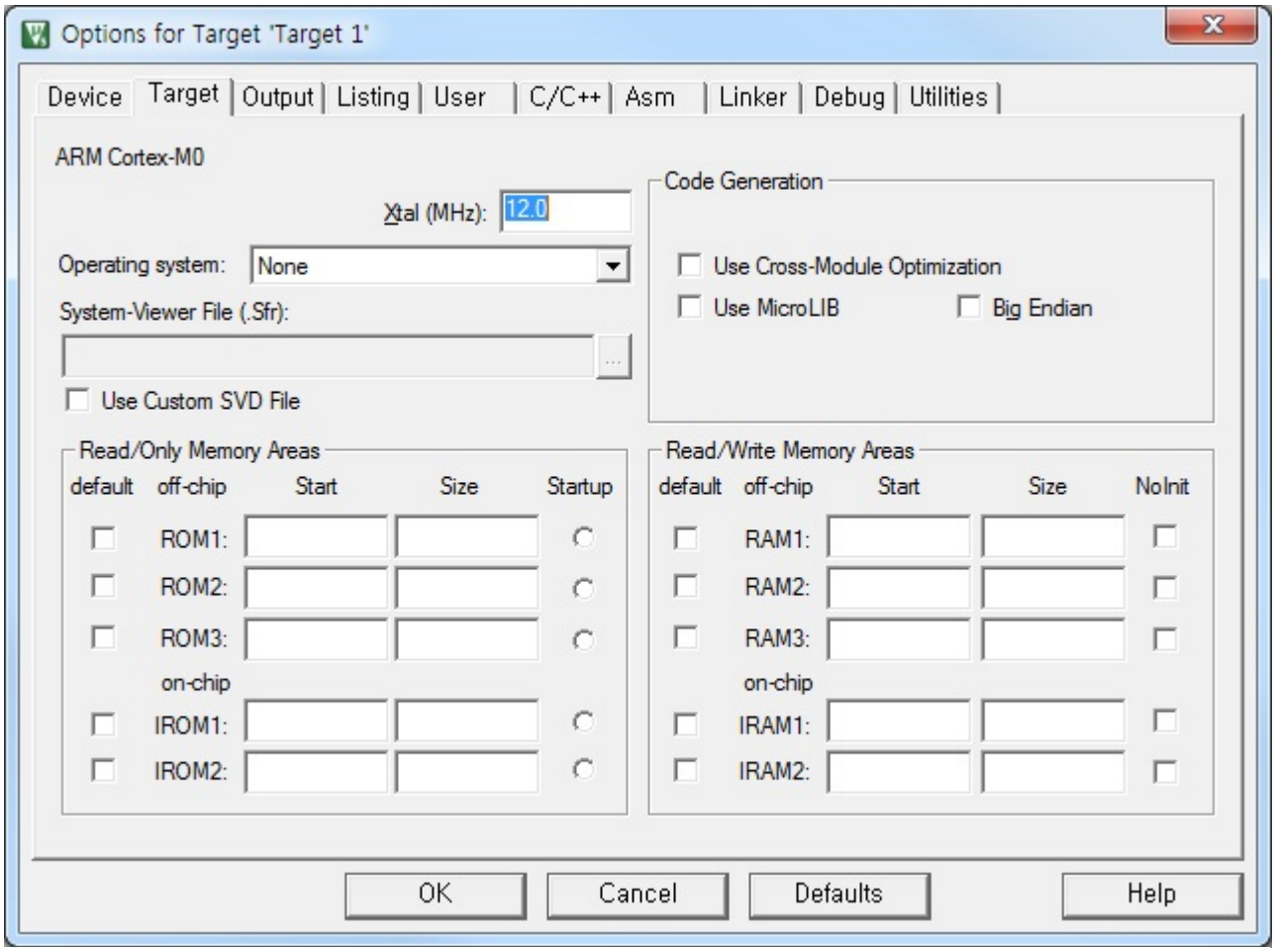


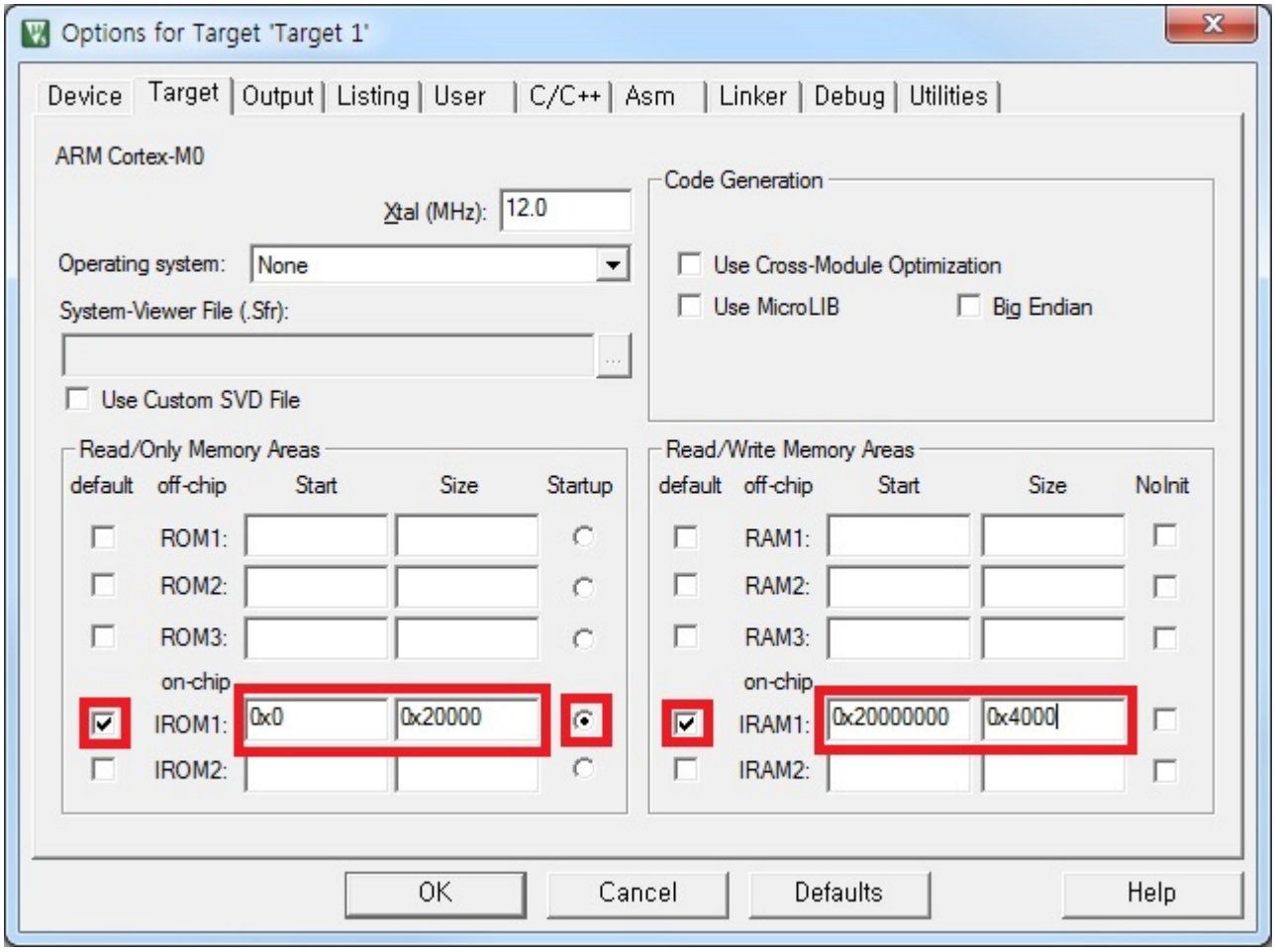


STEP 7. Memory setting!

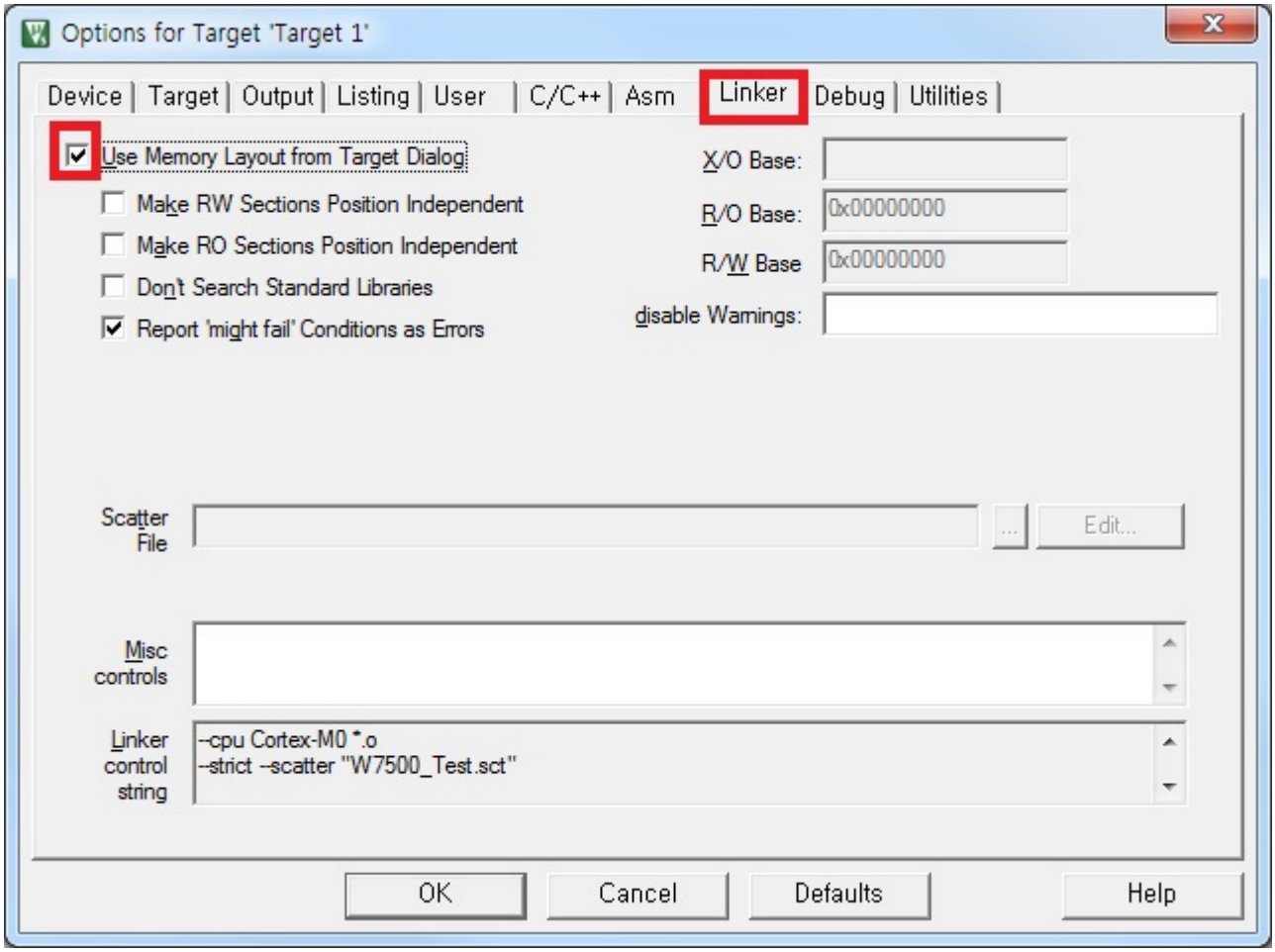


Click "Options for Target..."



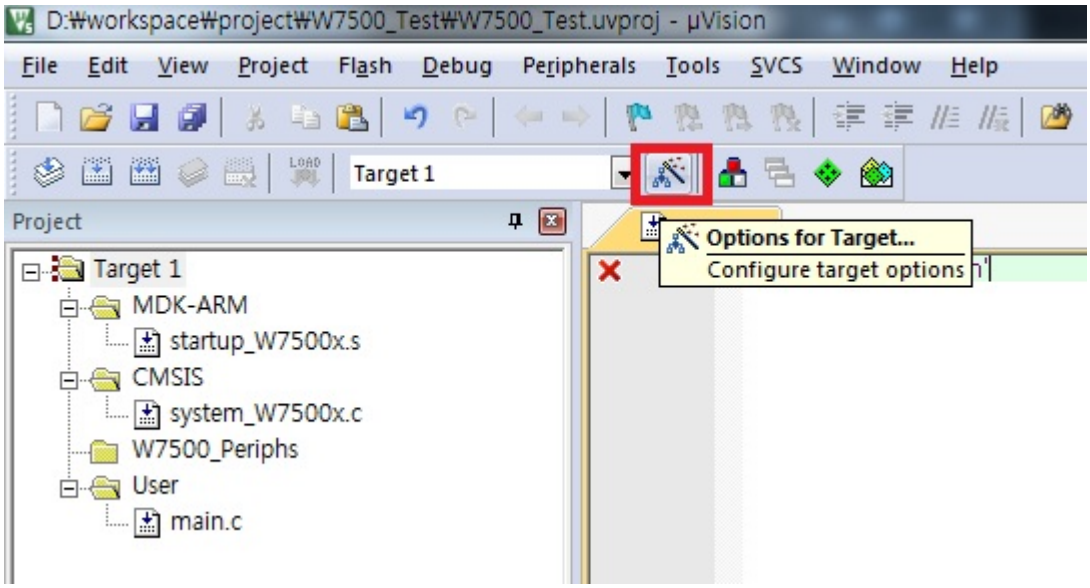


Click "Target" tap and set with the values which are shown in above pictures

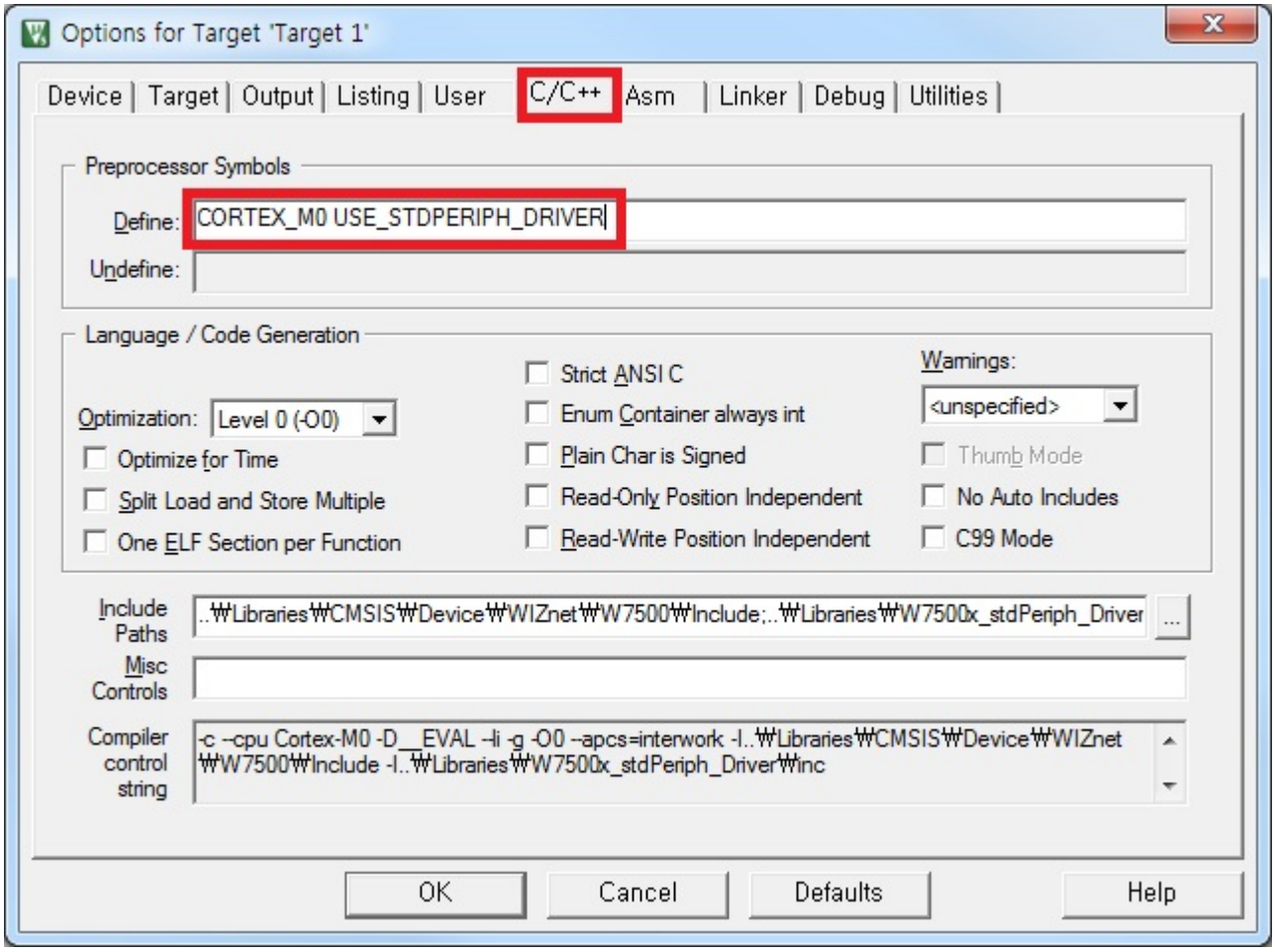


And click "Linker" tap and check [Use Memory Layout from Target Dialog]

STEP 8. Selection of Peripherals to use

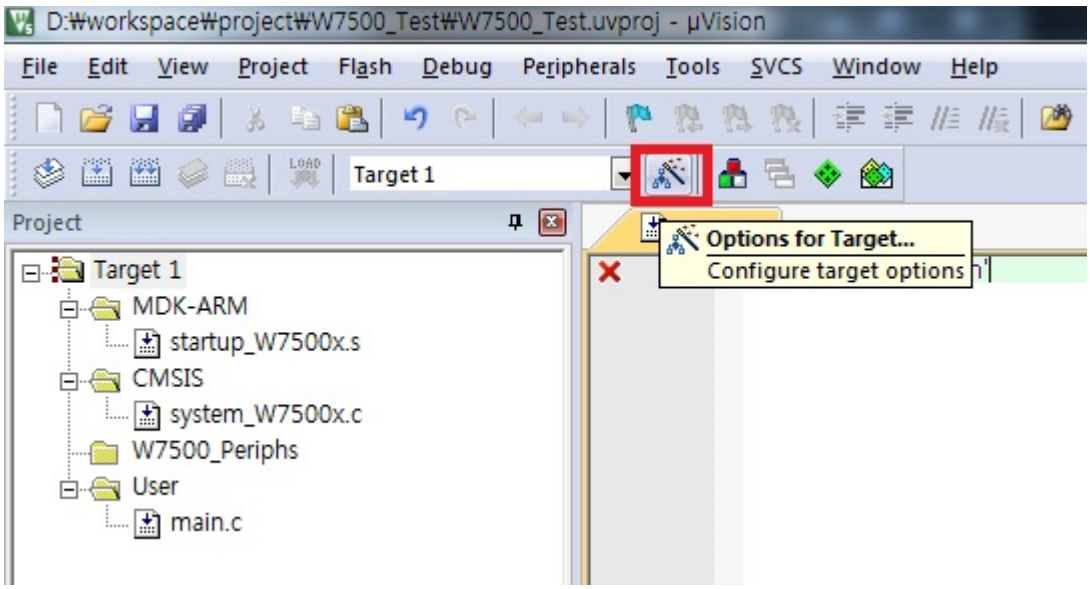


Click "Options for Target..."

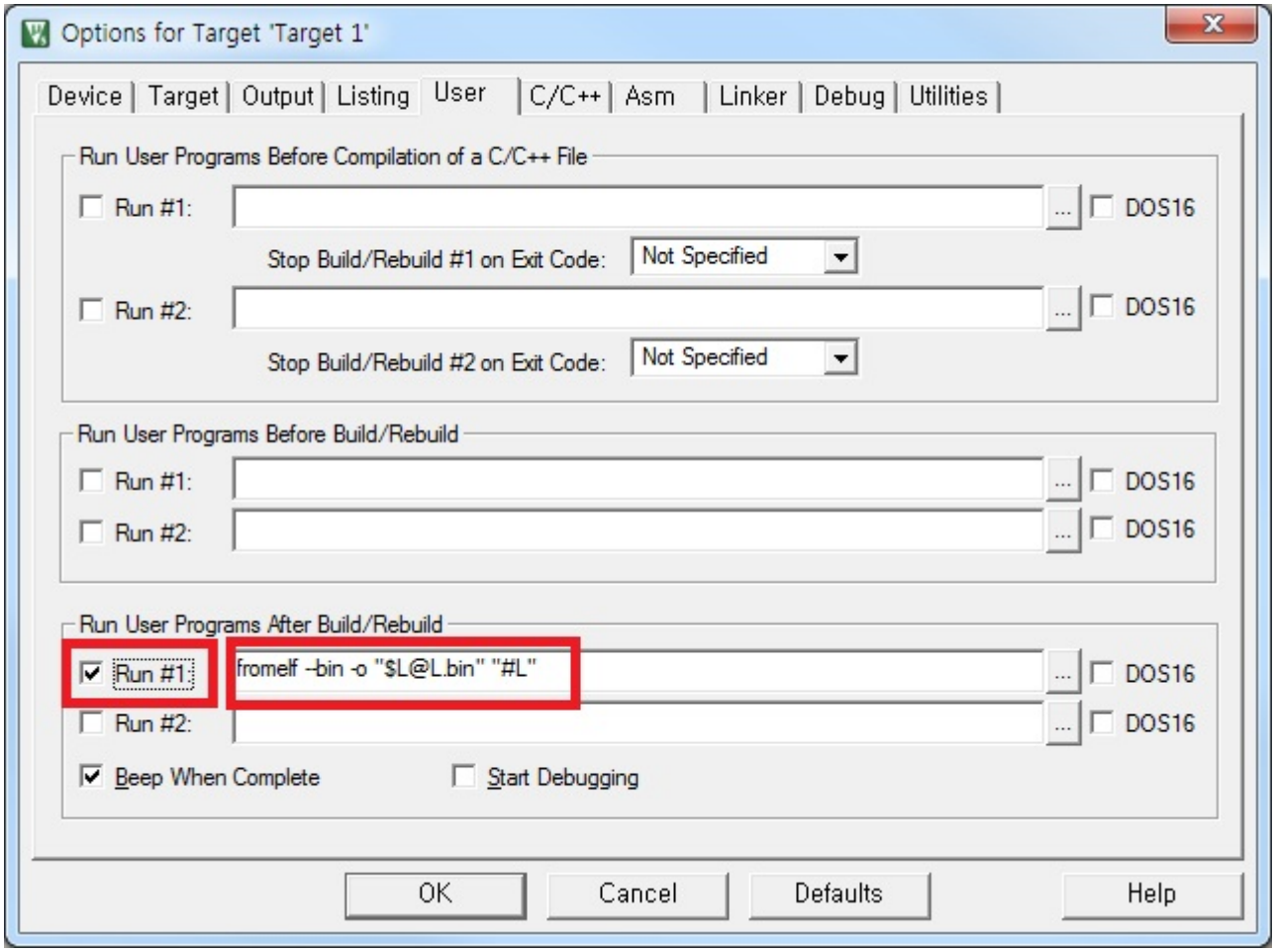


Click "C/C++" tap and add **CORTEX_M0 USE_STDPERIPH_DRIVER** in "Define" field.

STEP 9. Setting user program to use with the created bin file

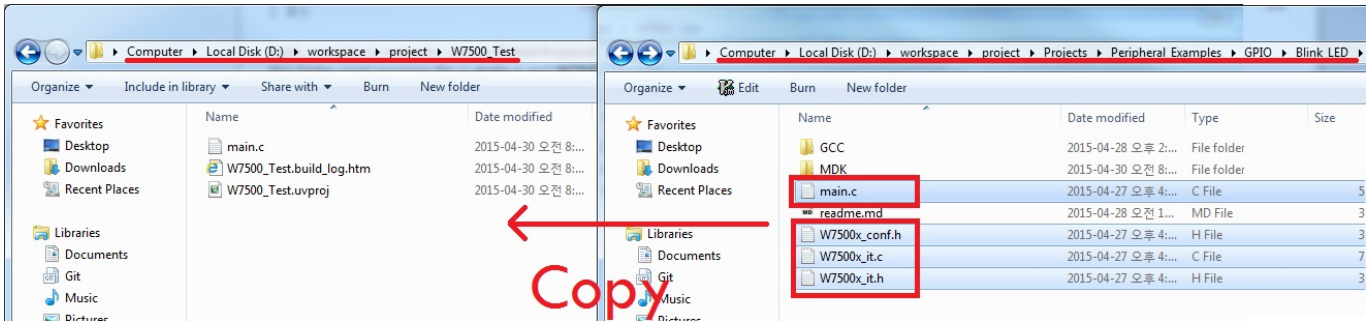


Click "Options for Target..."

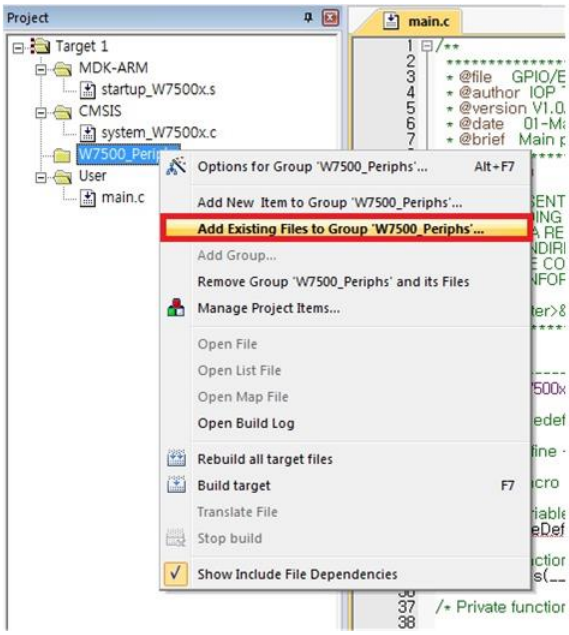


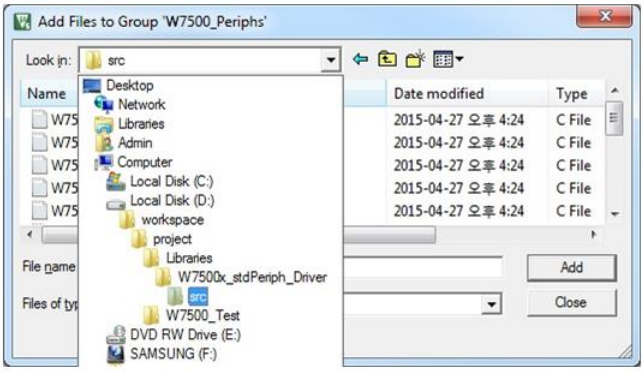
Click "User" tap and check "Run #1" in "Run User Programs After Build/Rebuild" section
and write this command **[fromelf --bin -o "$L@L.bin" "#L"]** in order CMSIS DAP to use the bin file.

STEP 10. Compile the example

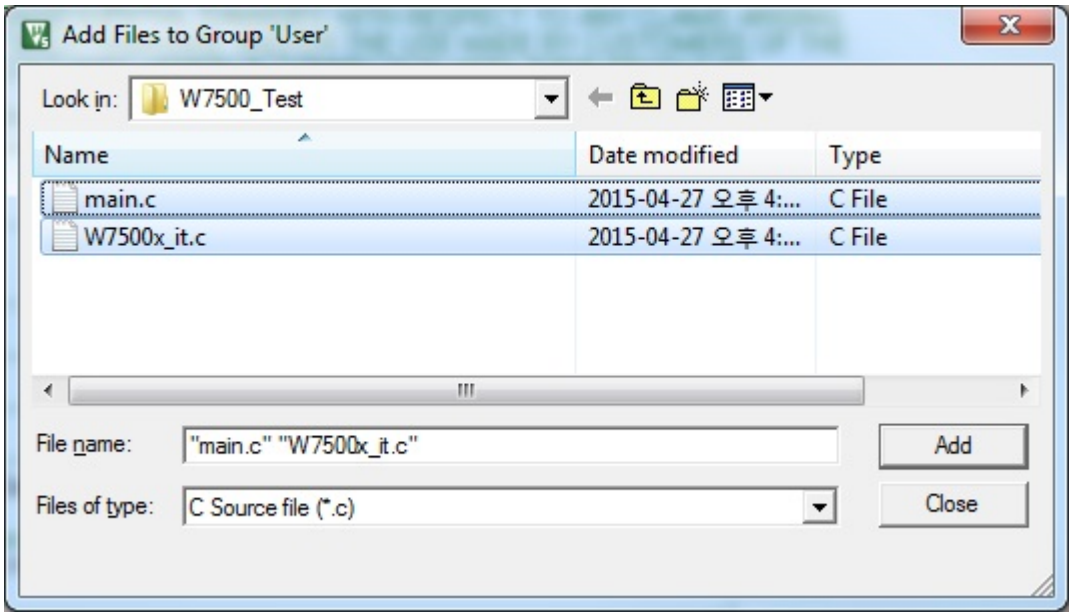


Let's compile the example code in
D:\workspace\project\Projects\Peripheral_Examples\GPIO\Blink_LED This fold consists of **main.c**, **W7500x_conf.h**, **W7500x_it.c** and **W7500x_it.h** and you should copy these four files to **D:\workspace\project\W7500_Test**(my project folder)



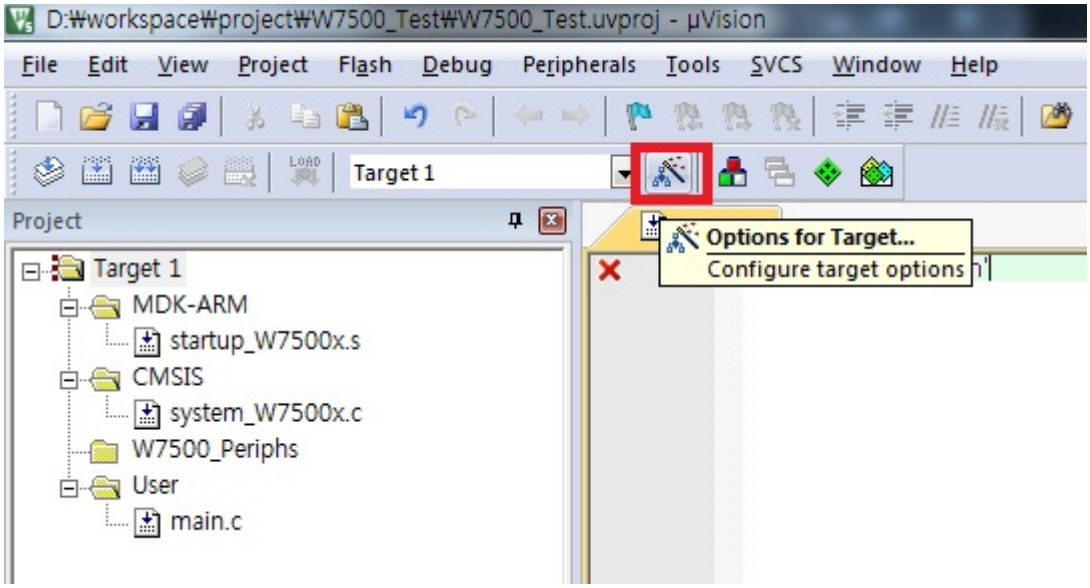


And copy W7500x_gpio.c into W7500_Periphs folder in order to use gpio peripheral

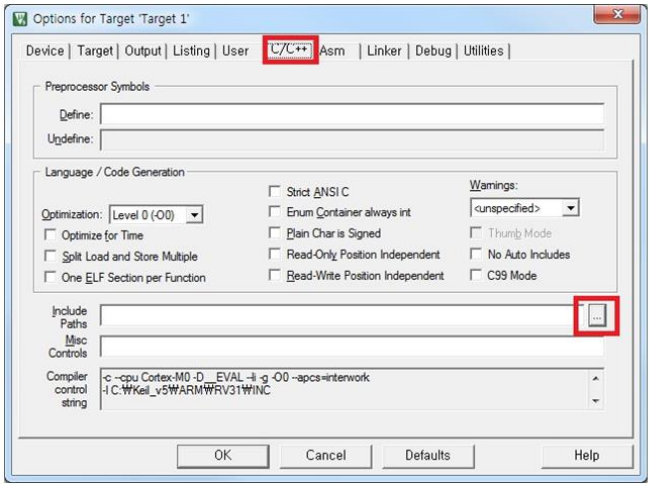


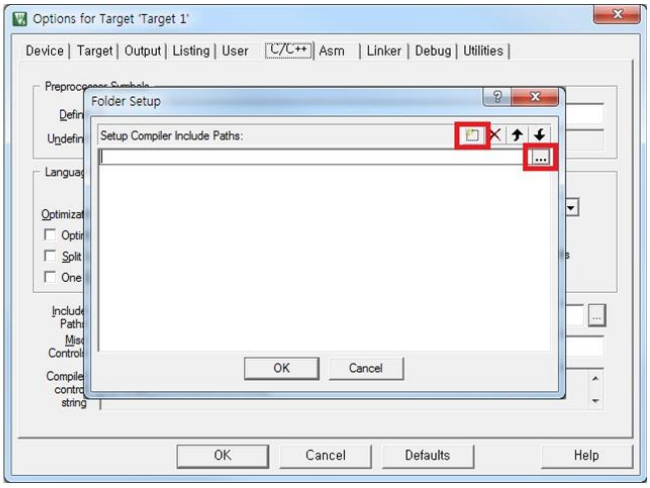
And copy **W7500x_it.c** into User folder for interrupt handlers

Add "Include Path" for **W7500x_conf.h** and **W7500x_it.h**

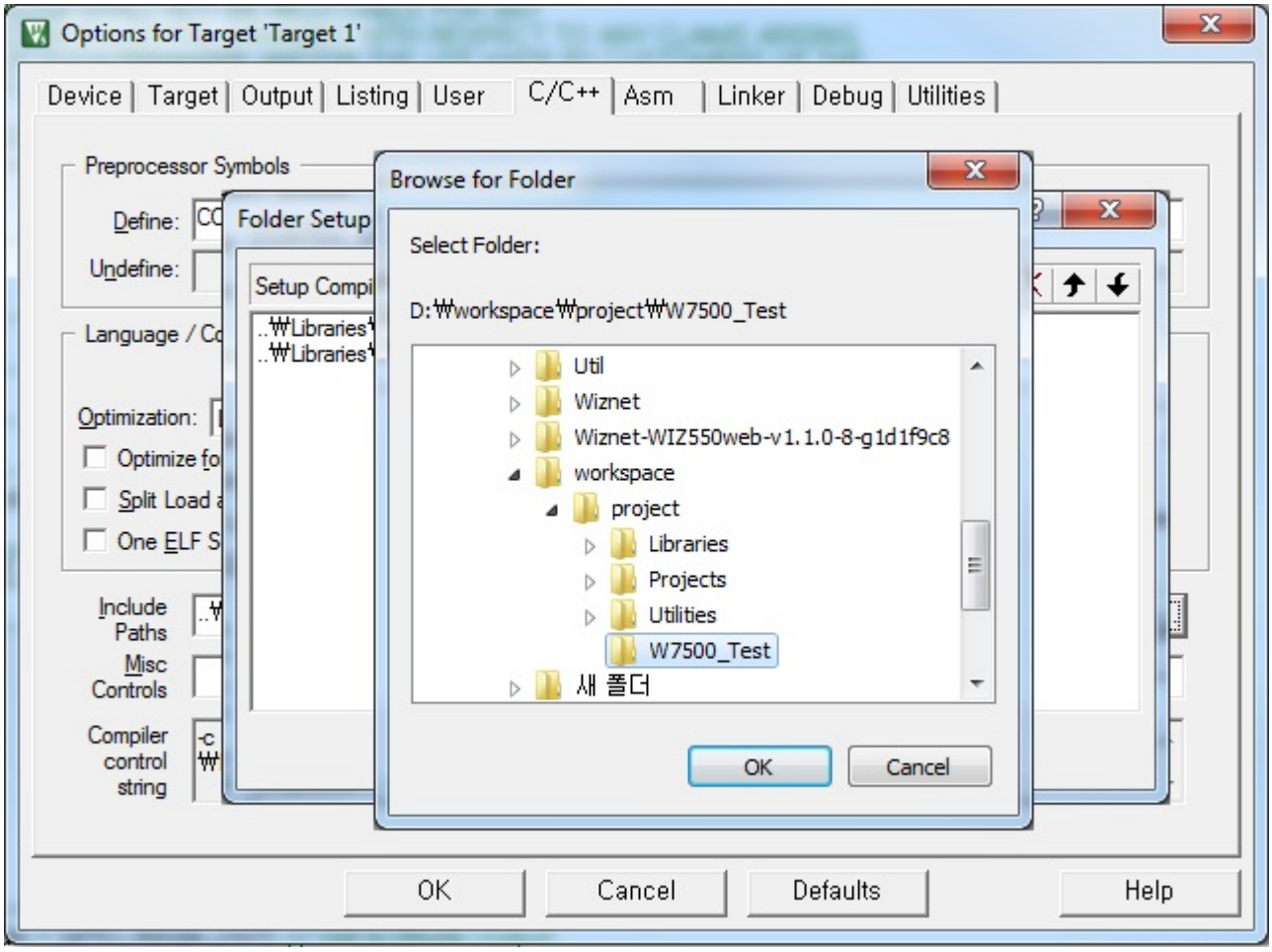


Click "Options for Target..."

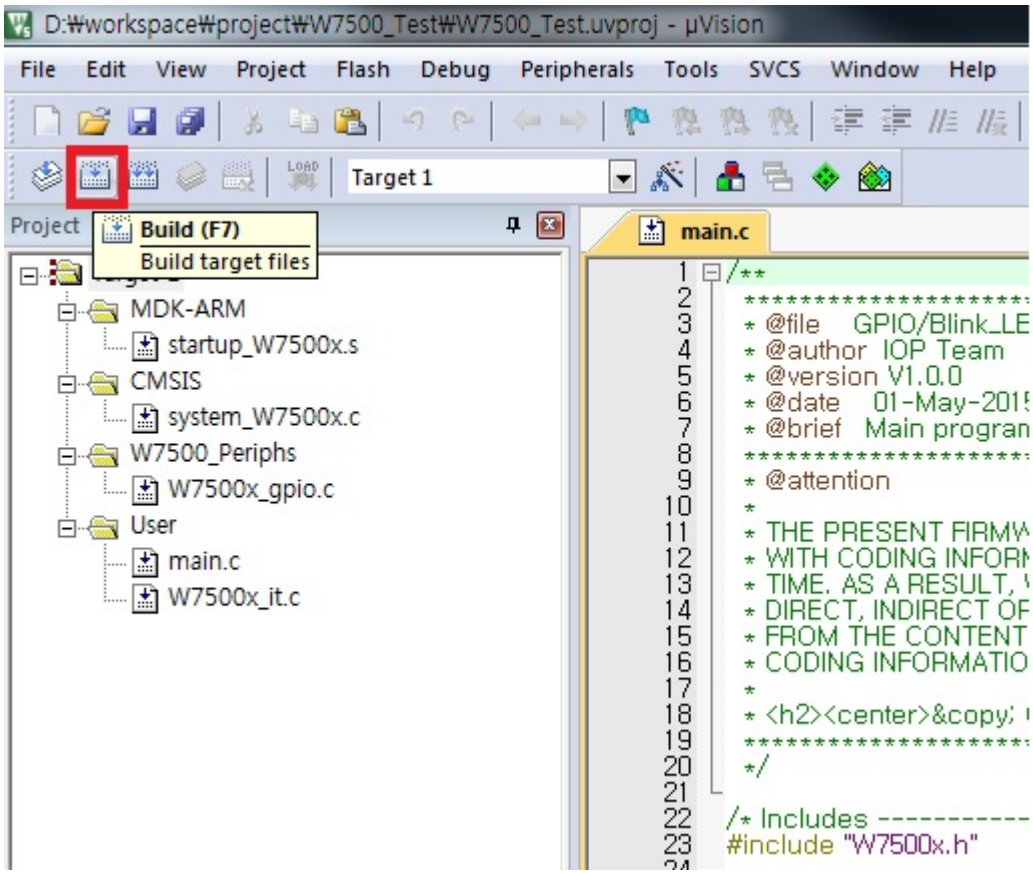




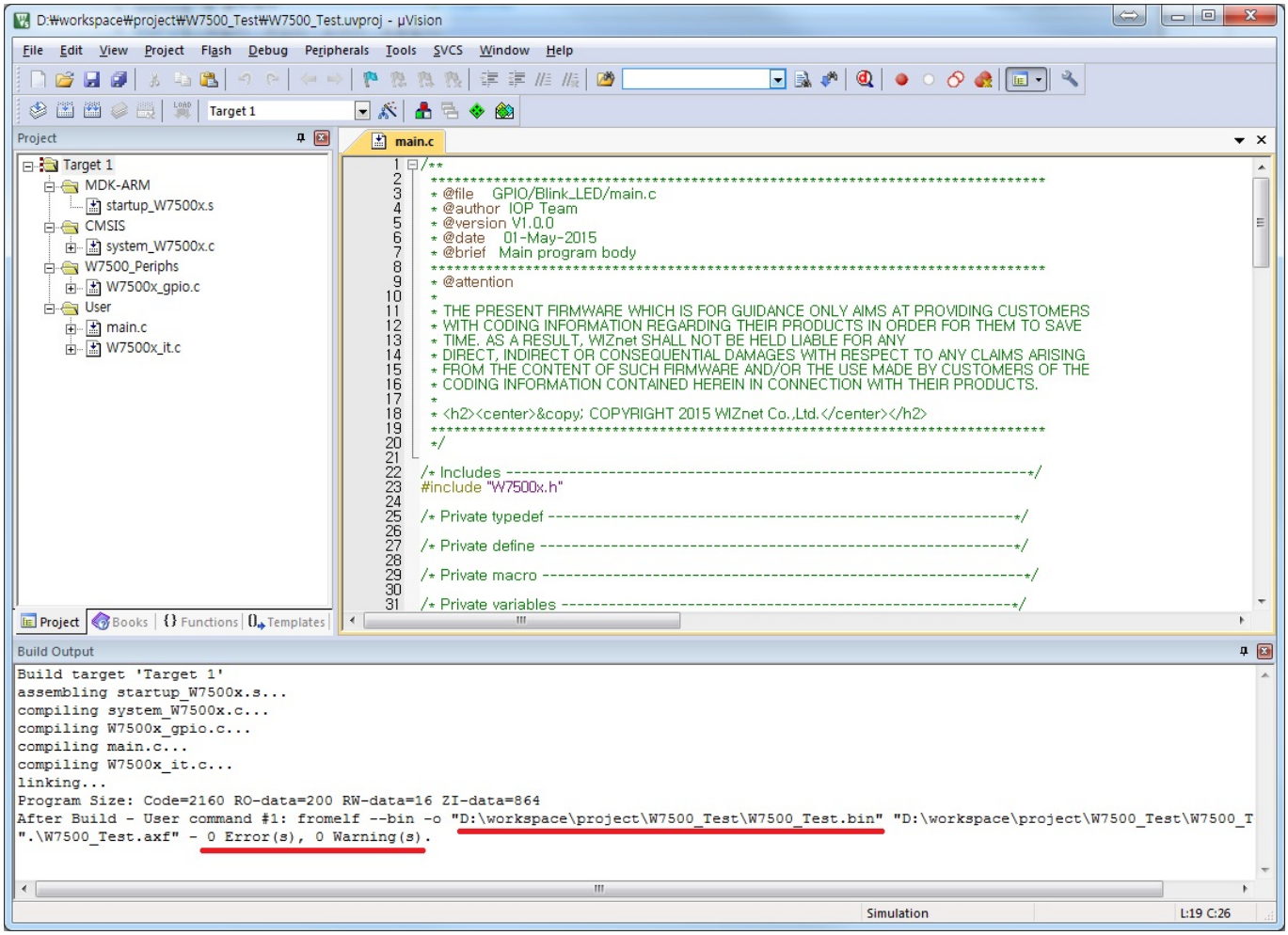
Click "Include Paths" in C\C++ tap, "folder icon and ... icon



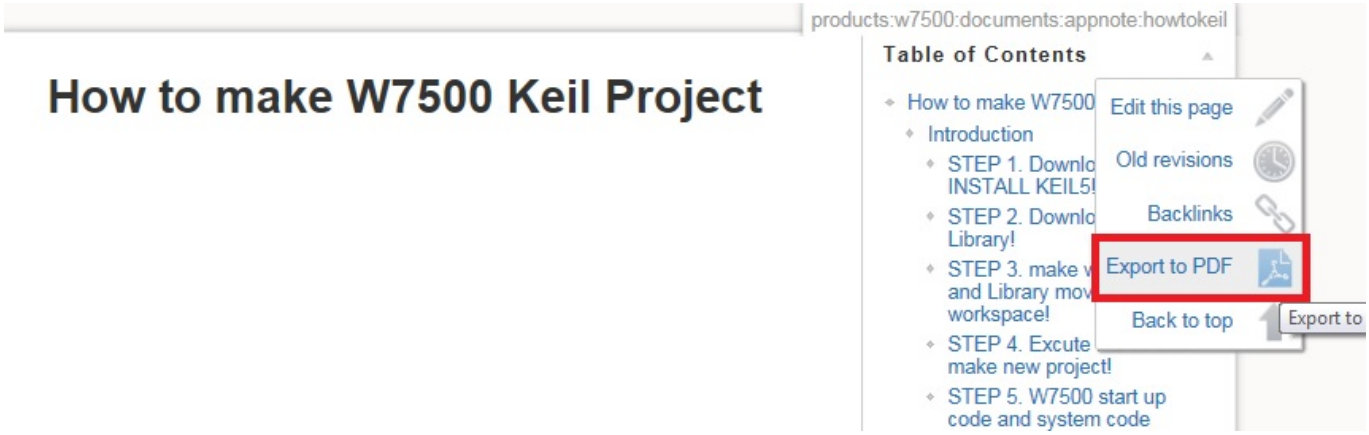
Set "include path" with **D:\workspace\project\W7500_Test**



Now compile this project!! by pressing **F7** or clicking **Build icon**



After compile, **W7500_Test.bin** file will be created. And then WIZwiki-W7500 will upload this bin file on itself via the User program you registered.



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