

DTP3 Software Development Environment Guide

DAINCUBE Corp.
ARM Cortex-M4 STM32F429IGT6

FORM 141021F – 2015.11.30



**DTP3 Software Development Environment
Guide**
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Preface

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Important information

This documentation is intended for qualified audience only. The product described herein is not an end user product. It was developed and manufactured for further processing by trained personnel.

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Product support

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Safety precautions

Be sure to observe all of the following safety precautions.

Strict observance of these warning and caution indications are a **MUST** for preventing accidents, which could result in bodily injury and substantial property damage. Make sure you fully understand all definitions of these terms and related symbols given below, before you proceed to the manual.

Symbols

The following symbols may be used in this specification:



Warning : Warnings indicate conditions that, if not observed, can cause personal injury.



Caution : Cautions warn the user about how to prevent damage to hardware or loss of data.



Note : Notes call attention to important information that should be observed.

REVISION HISTORY

[illegible]

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1. Introduction

This document is for applying of DTP3(Daincube Teach Pendant Cortex_M4) to software development. Daincube corporation provides DTP3_DEVKIT for software engineer.

DTP3 Platform and Specification

OS is Window7_32bit, development tool is Atollic' s software TrueSTUDIO and debugging and Hex file download by ST-Link/V2 JTAG.

DTP3 development environment consist of 5 steps.





Summary of DTP3 development environment

- A. TrueSTUDIO Lite version Install.
- B. The ST-Link/V2 configuring the development environment.
- C. HOST PC and DTP3 connection (ST-Link/V2 JTAG).
- D. How sample program debugging in HOST PC.
- E. Make sample project.

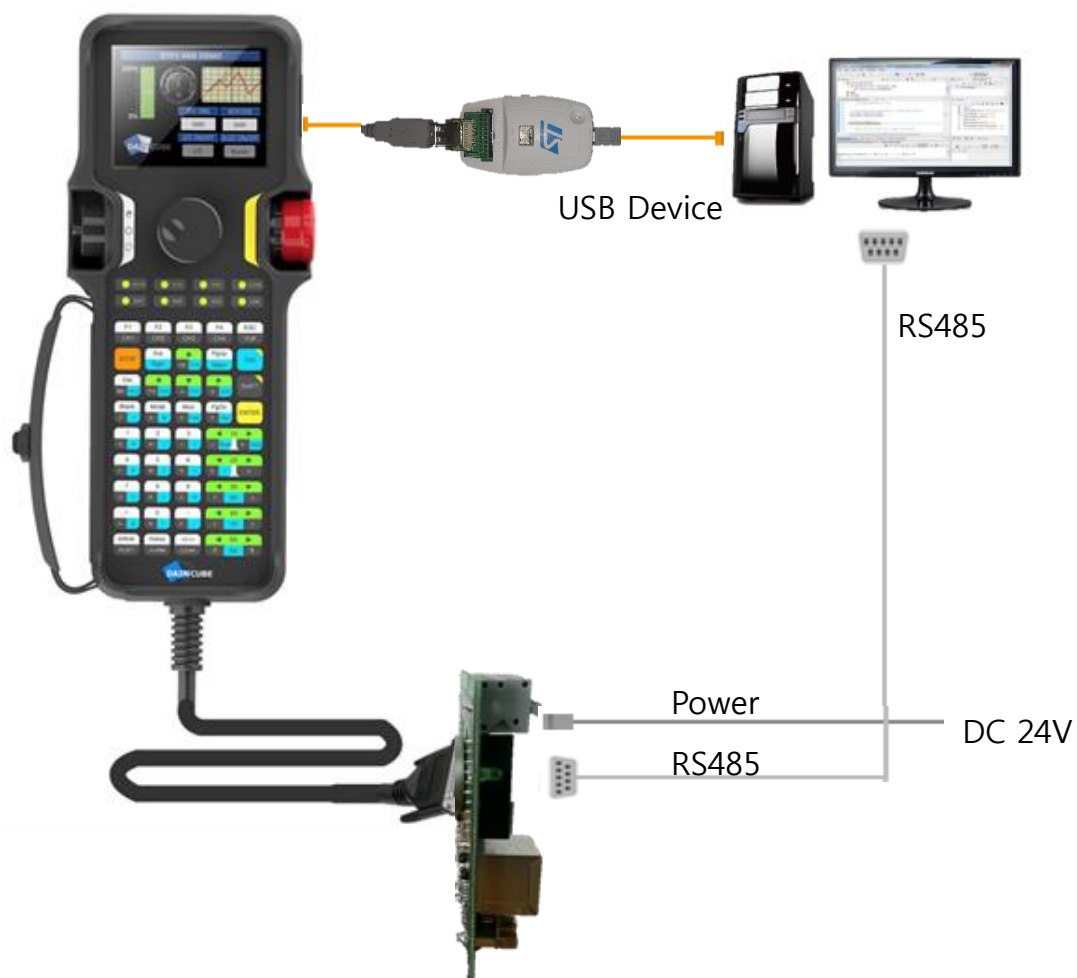
※ This document was proceeded in HOST PC Windows7_32bit environment.

1.1. DTP3 Package List

DTP3 Package List

Item	Photo	Options	Quantity
DTP3		Basic Configuration System Cable: 1.5m *Options System Cable: 1.5 ~ 5m	1
Junction Box		*Options	1
ST-Link/V2		*Options	1
Development CD		*Options	1

1.2. DTP3 Connecting



2. TrueSTUDIO Install

2.1. TrueSTUDIO Download

Download TrueSTUDIO tool.

Link to : <https://atollic.com/>



HOME TRUESTUDIO BUY/PRICING FORUM RESOURCES PARTNERS ABOUT US Q



Target support

Free download

Evaluate Pro

Buy / Get quote

Atollic® TrueSTUDIO® IDE

Commercially supported C/C++ IDE based on industry-standard components, plus powerful commercial extensions and enhancements.

Atollic TrueSTUDIO Free Edition

- Free to download and use
- No code size limits

Atollic TrueSTUDIO Pro Edition

- The tools the pros use to save time and speed development
- Advanced code analysis and debug features



HOME TRUESTUDIO BUY/PRICING FORUM RESOURCES PARTNERS ABOUT US Q

Download

Home / Resources / Download

Select your operating system



Apple Mac OS
Coming 2017

Atollic provides a single installer for all TrueSTUDIO editions, one for each operating system.

Target support

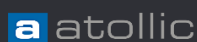
Free download

Evaluate Pro

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News

Atollic TrueSTUDIO 7.1.1 is released
Atollic TrueSTUDIO 7.1.0 is released



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Only a few simple questions and you are on your way to using the new standard in ARM development.

We use your registration to notify you about new versions, bug fixes, new features and target support updates. We also share tips and tricks and invite you to attend free training webinars.

We do not sell your information to any third parties. You can opt out of these communications at any time.

[TrueSTUDIO users / customers](#)
[TrueSTUDIO partners / FAEs](#)

Email* <input type="text" value="yjhuh@daincube.com"/>	Country* <input type="text" value="Korea South"/>
What best describes you?* <input checked="" type="radio"/> Non-commercial <input type="radio"/> Contractor <input type="radio"/> Small business <input type="radio"/> Large business	Device family of interest <input type="text" value="STMicroelectronics STM32"/>

[Download installer - Windows versions](#)

The partner form allows qualified FAEs and other partner employees to request a free TrueSTUDIO Pro license.

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TrueSTUDIO Lite/Pro client

Installation process is easy. The [installation guide](#) will answer questions related to installation and activation of licenses. We recommend users with on-going projects upgrading to a later version to read the [upgrade guide](#).

We recommend using the *latest version* below but *Older versions* are also publicly accessible.

Latest version

Filename	Version	Size	Revision history
Atollic_TrueSTUDIO_for_ARM_windows_x86_v7.1.1_20170310-1837.exe	7.1.1	784 MB	readme.txt

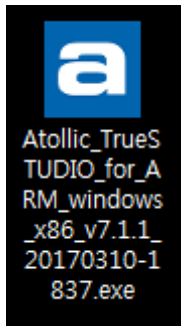
All versions

Filename	Version	Size	Revision history
Atollic_TrueSTUDIO_for_ARM_windows_x86_v7.1.1_20170310-1837.exe	7.1.1	784 MB	readme.txt
Atollic_TrueSTUDIO_for_ARM_windows_x86_v7.1.0_20170201-1344.exe	7.1.0	783 MB	readme.txt
Atollic_TrueSTUDIO_for_ARM_windows_x86_v7.0.1_20161216-1540.exe	7.0.1	762 MB	readme.txt

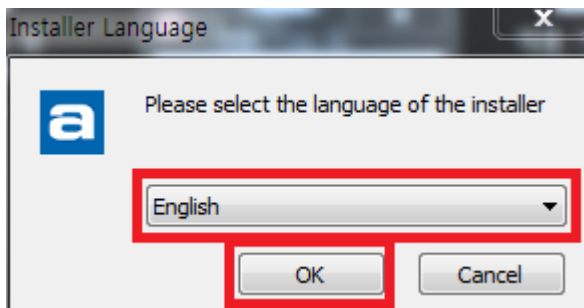
※ This document was proceeded in TrueSTUDIO 7.1.1 Lite Version environment.

2.2. True STUDIO Install

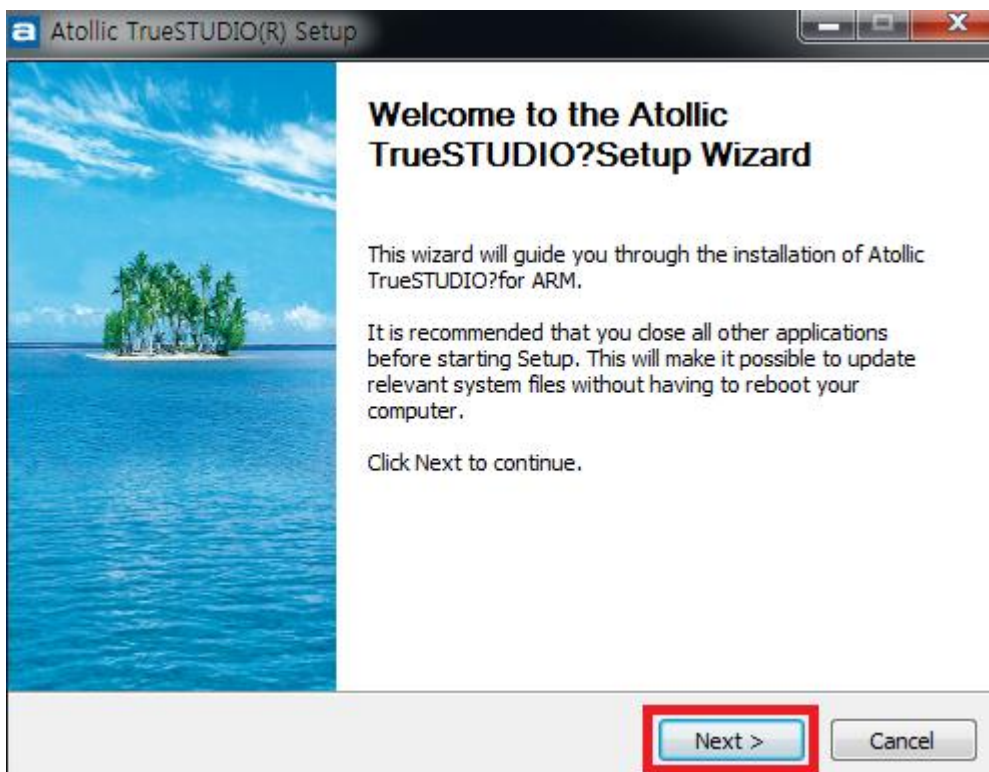
Click download install file.



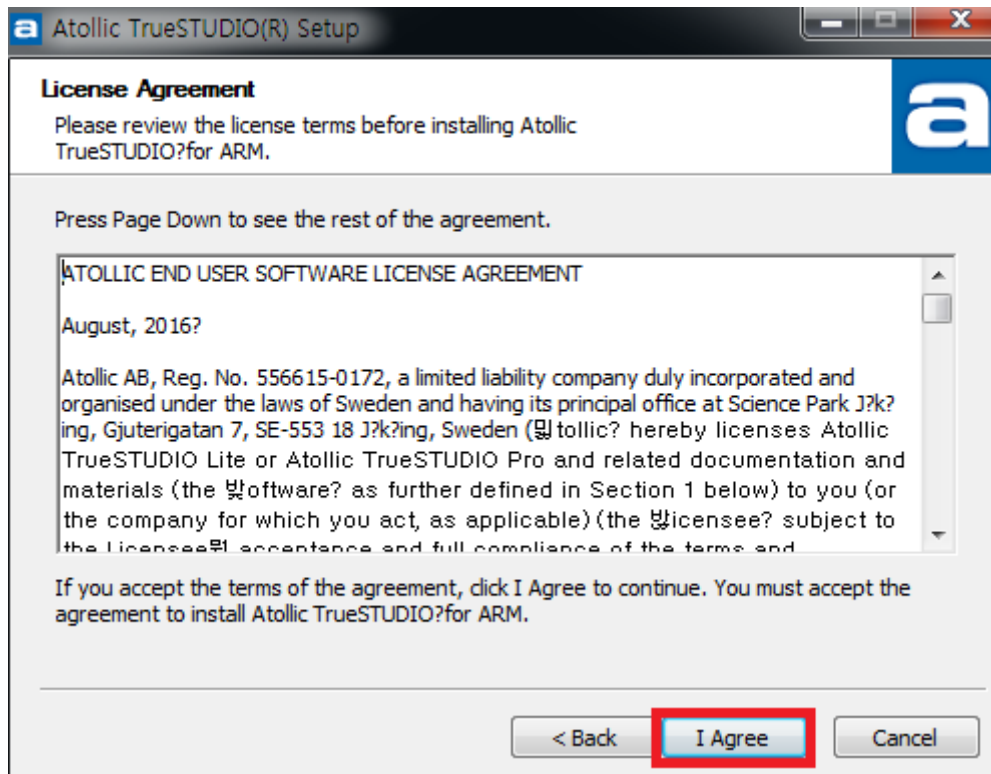
Select language and click “OK” button.



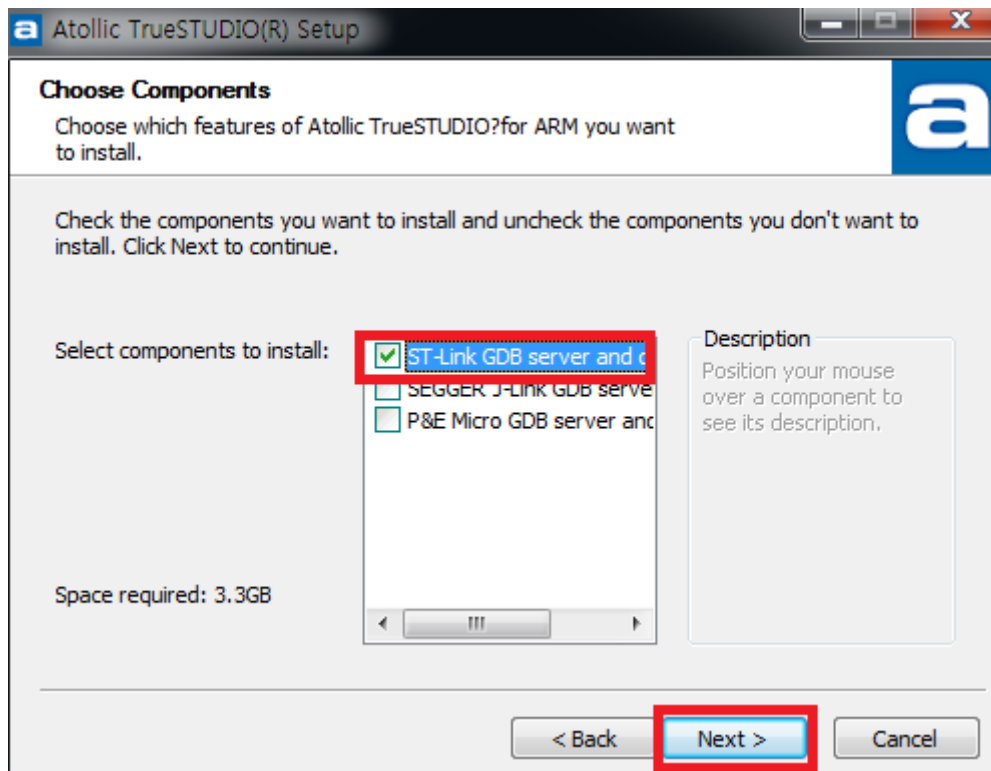
Click “Next” button.



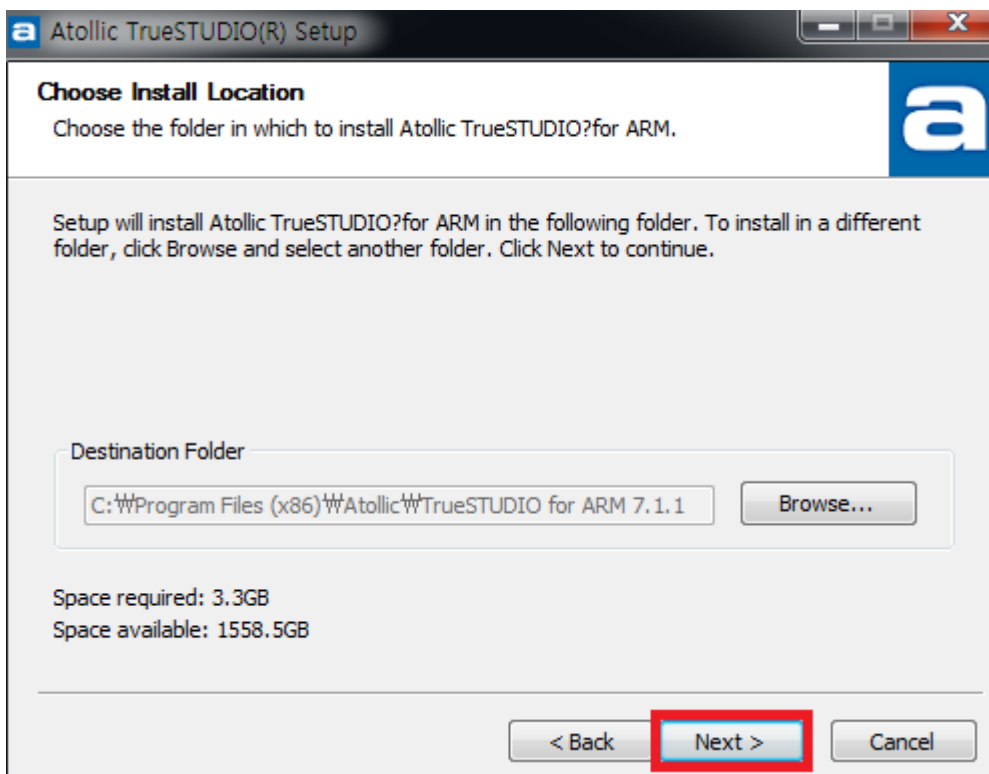
Agree with all license and click “I Accept” button.



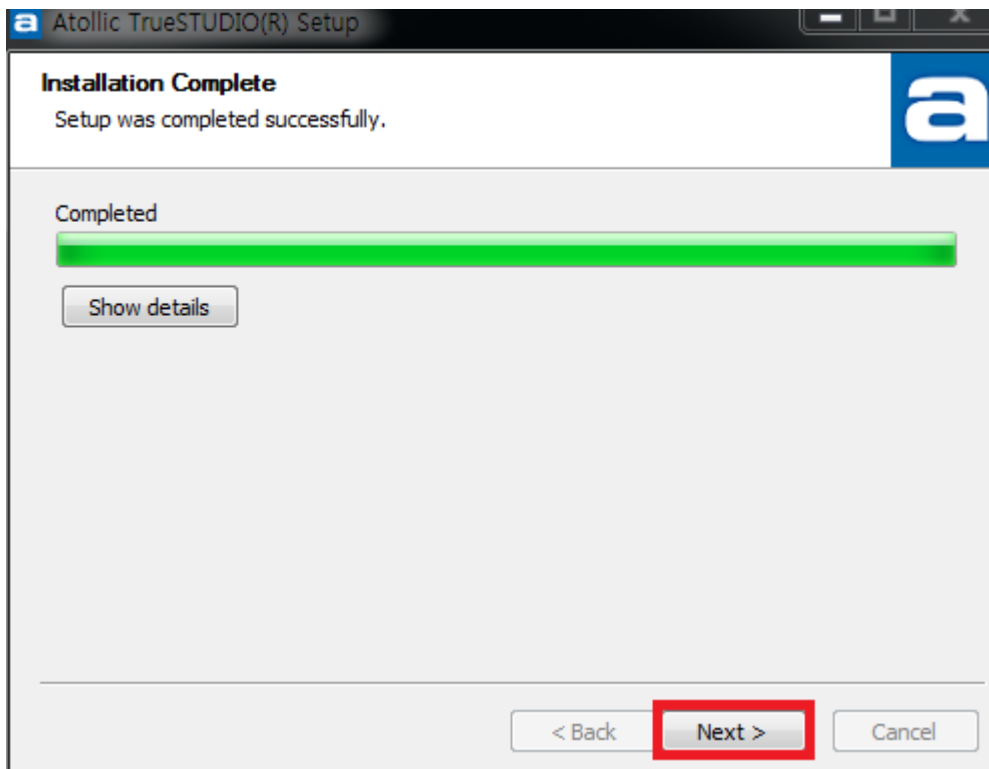
Check on “ST-Link GDB” and click “Next” button.

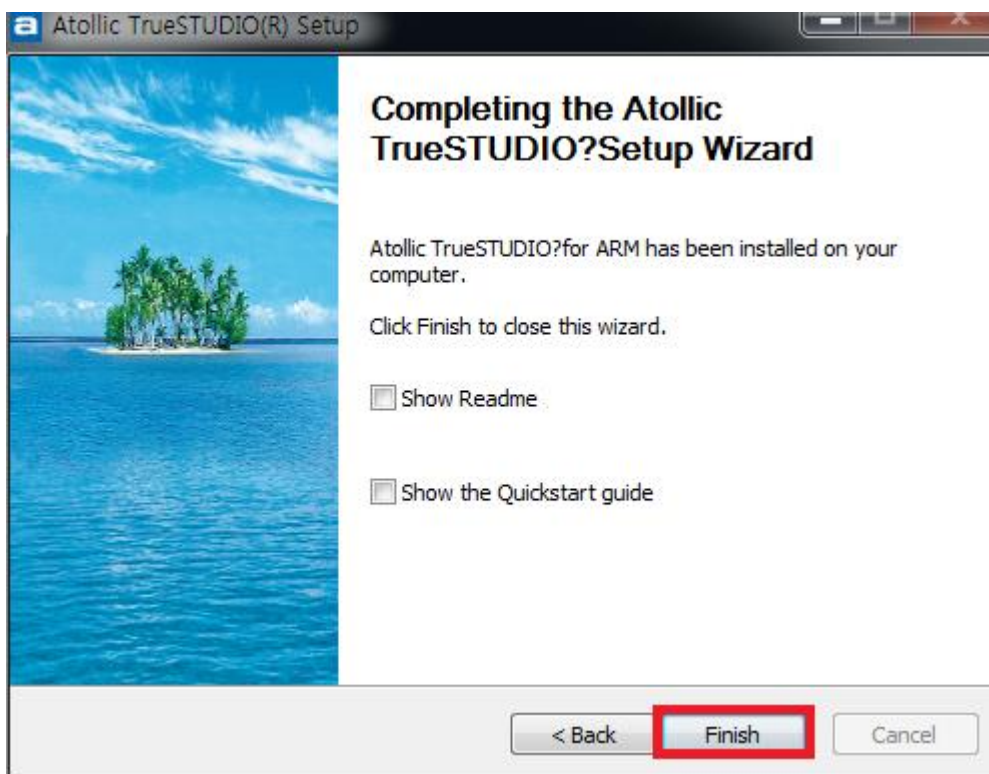
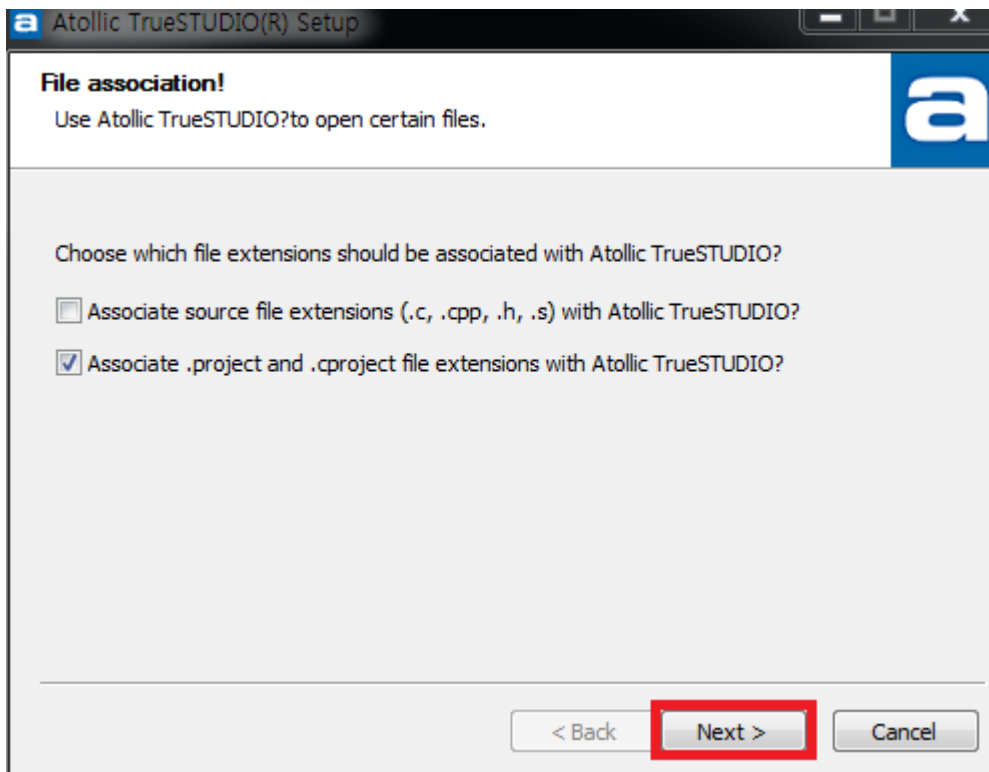


Check on Destination Folder and click “Next” button.

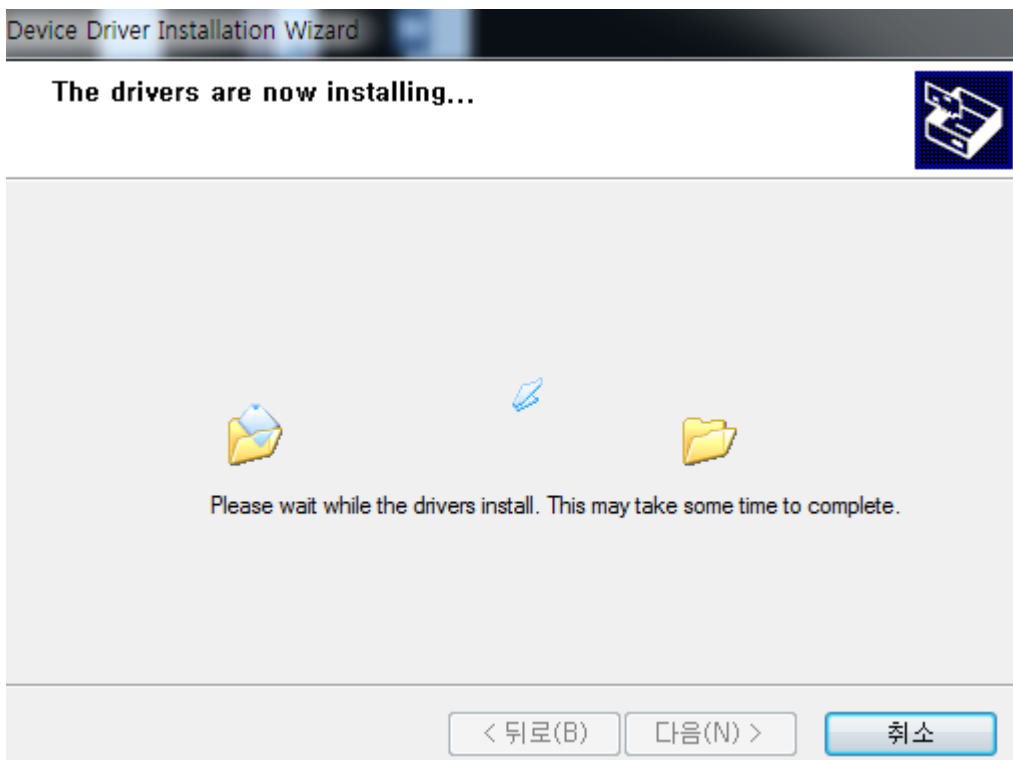
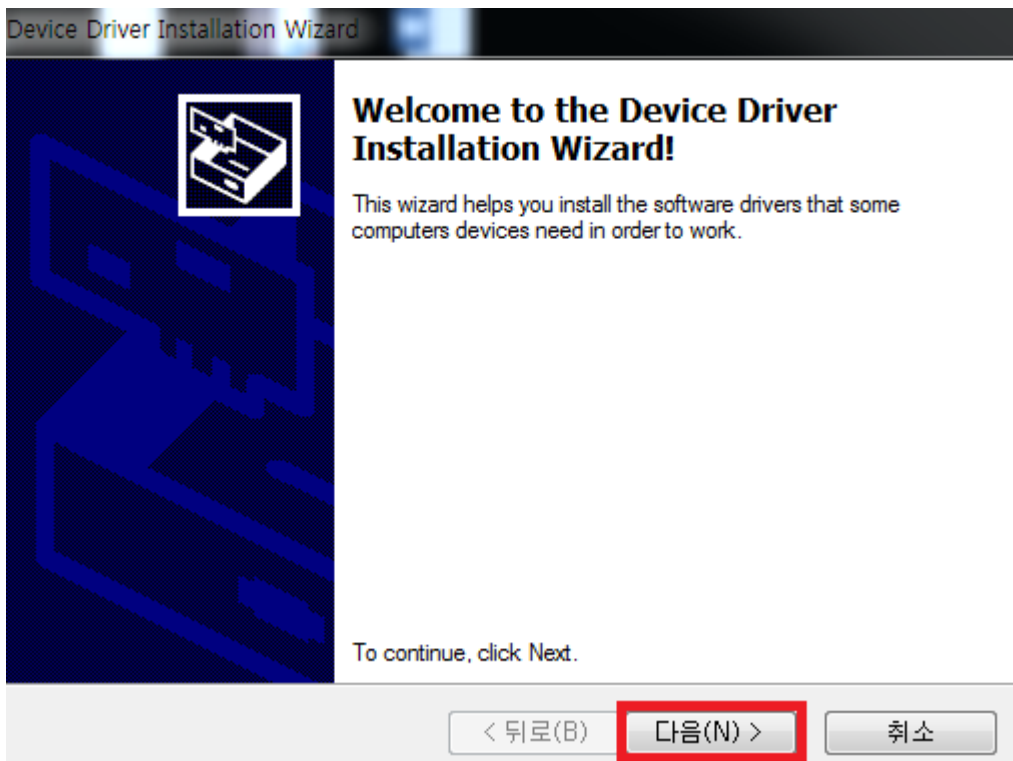


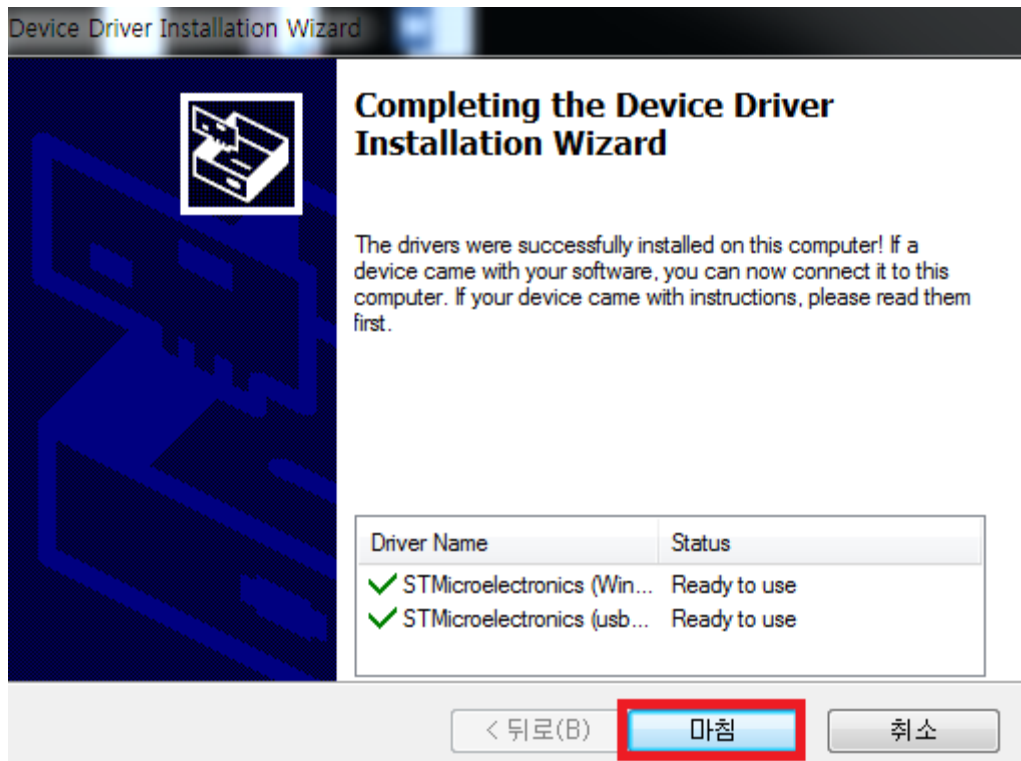
Install finish, click “Finish” button.





If you appear ST-Link/V2 driver install program, You will start install.



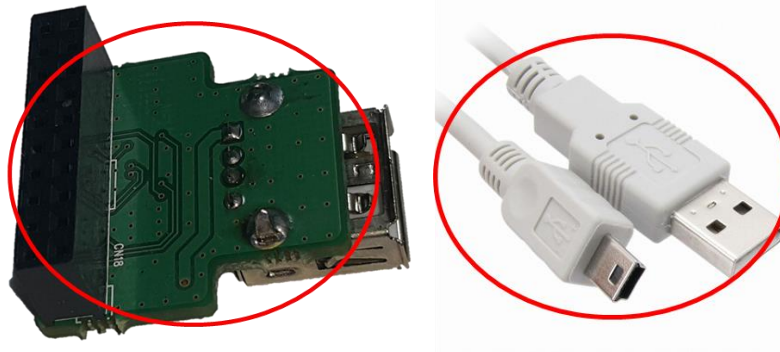


3. ST-Link/V2 Development environment

Setting to ST-Link/V2.

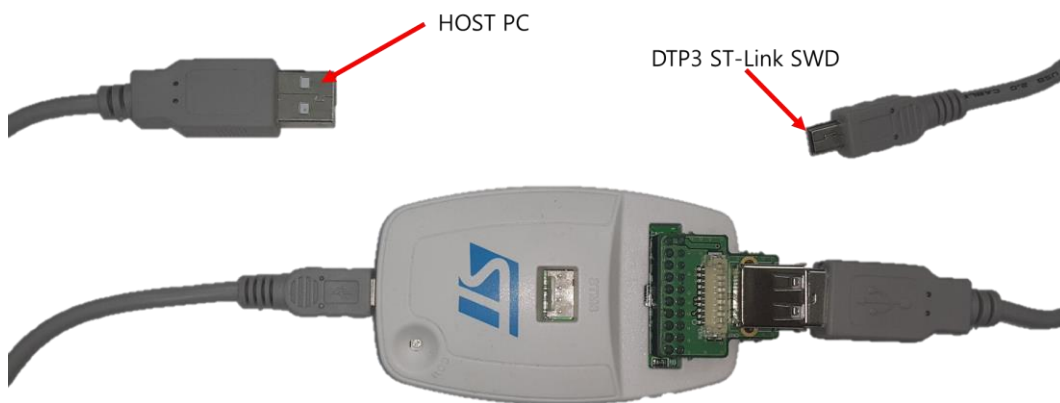


< Purchase basic configuration items ST-Link/V2 >



< Daincube corporation items. >

DTP3 development environment items need 4 items and ST-Link/V2 JTAG connection method is below picture.



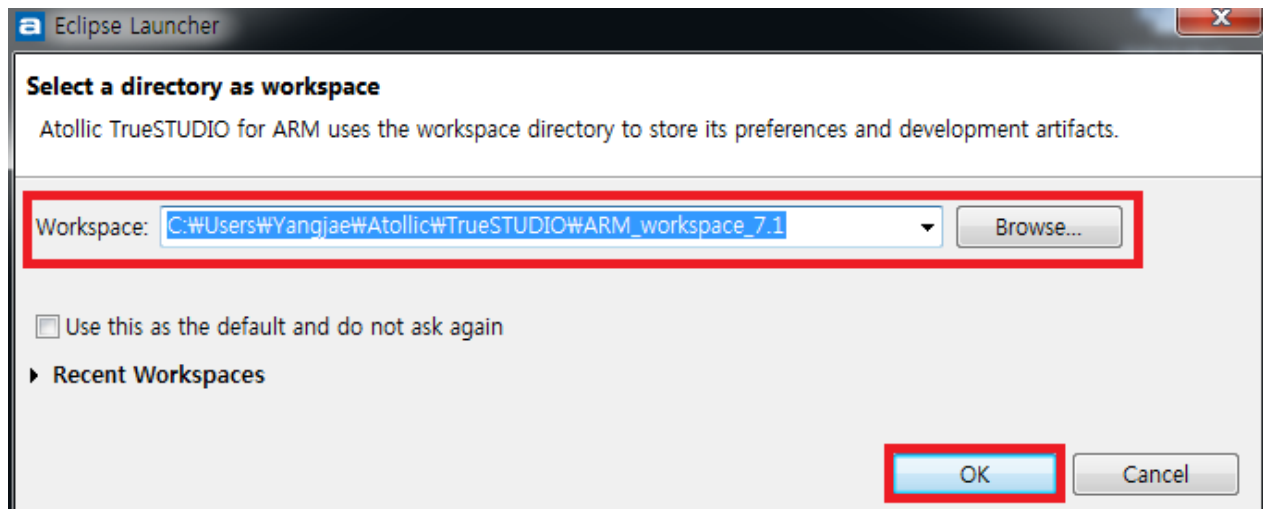
< HOST PC & DTP3 Connection >

4. DTP3_API Project

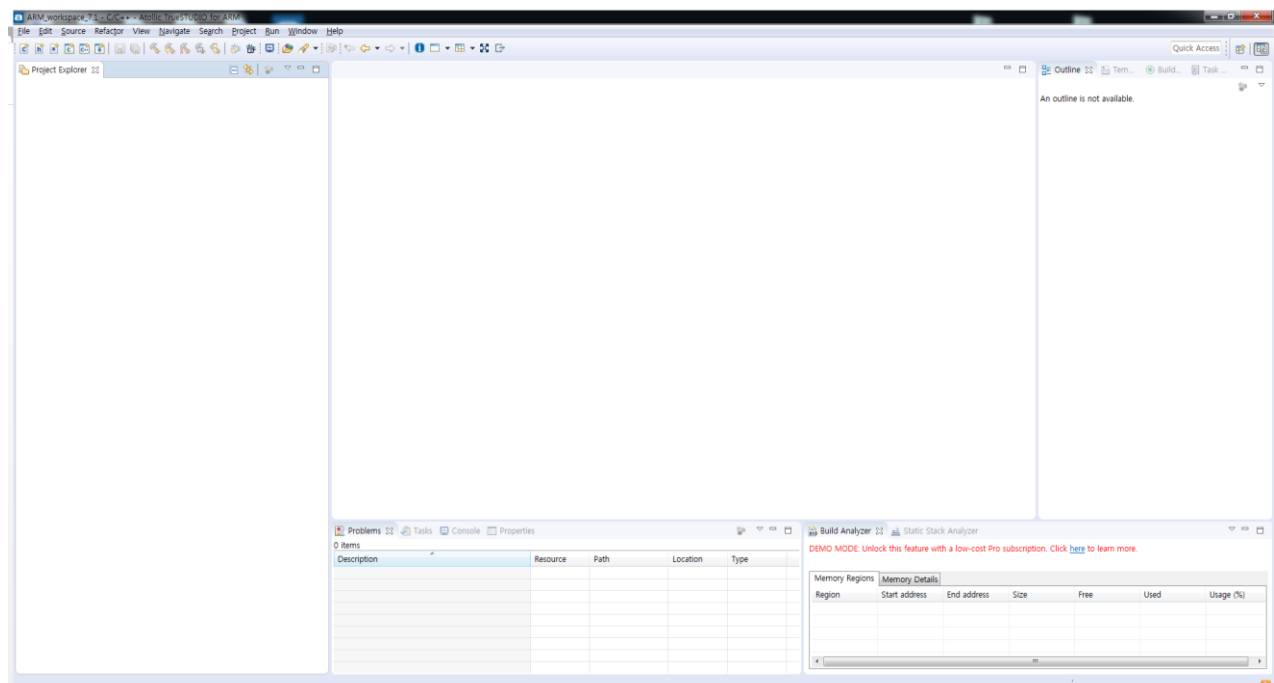
4.1. DTP3_API Project Build

Daincube corporation provides DTP3_API Project and Debugging at TrueSTUDIO10.

Execute TrueSTUDIO10 and select workspace.



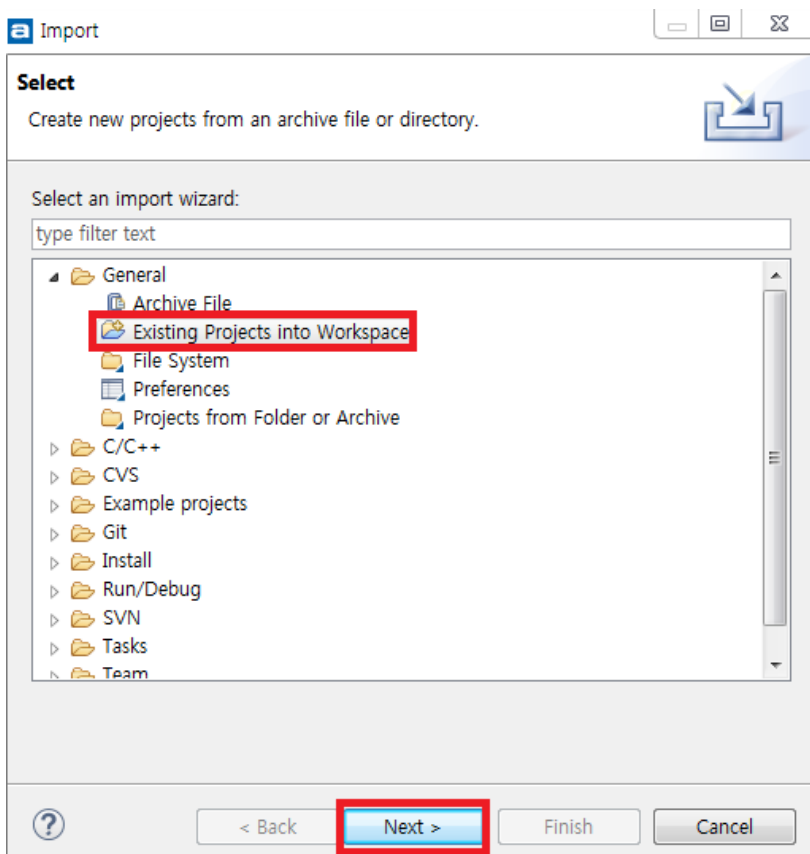
TrueSTUDIO10 Main screen.



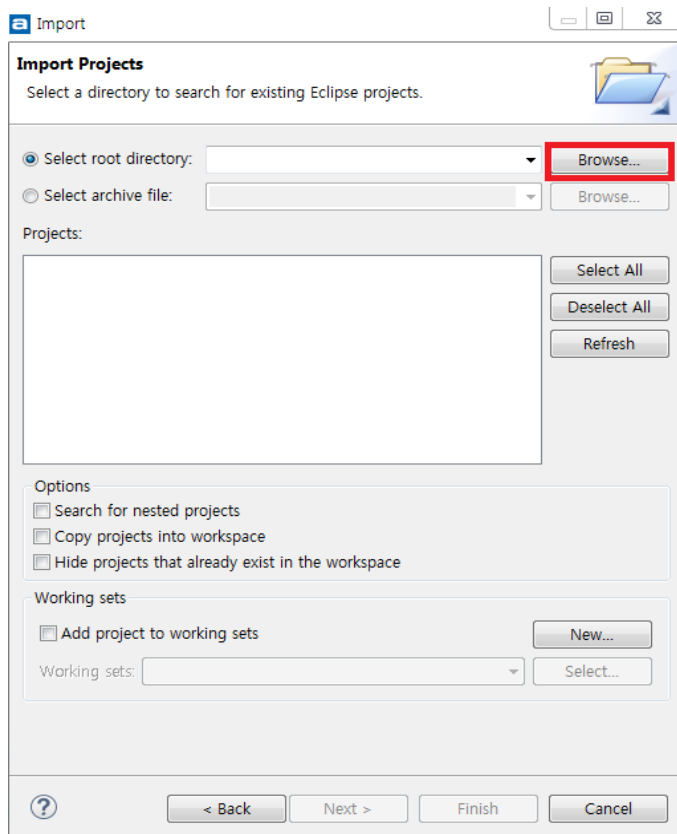
Click “Project Explorer” click right mouse button and click “Import” button.



Select “Existing Projects into Workspace” and click “Next” button.

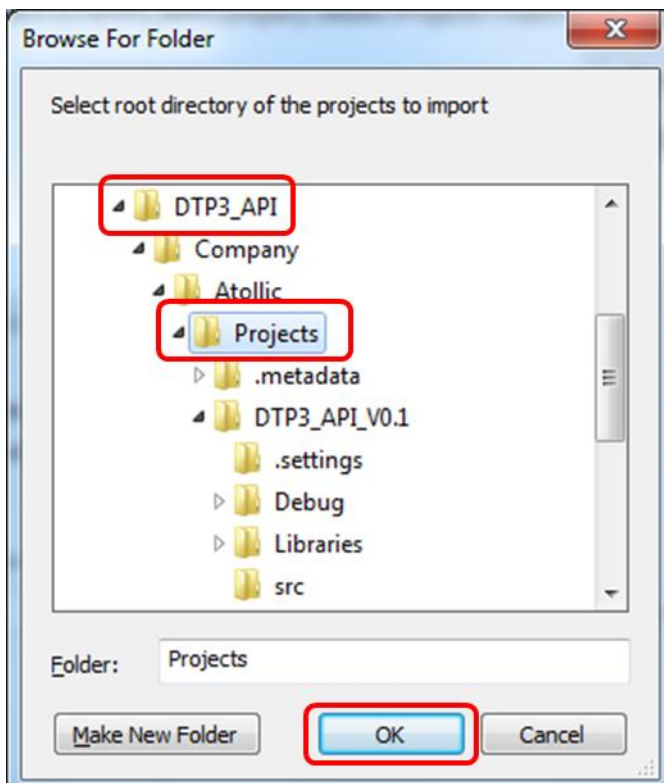


Click “Browse” button.

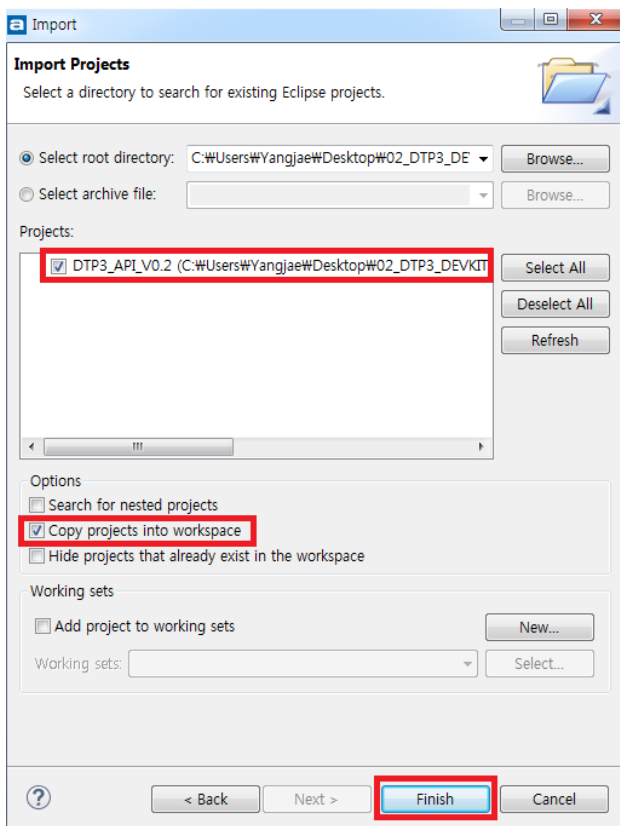


Select project path and click “OK” button.

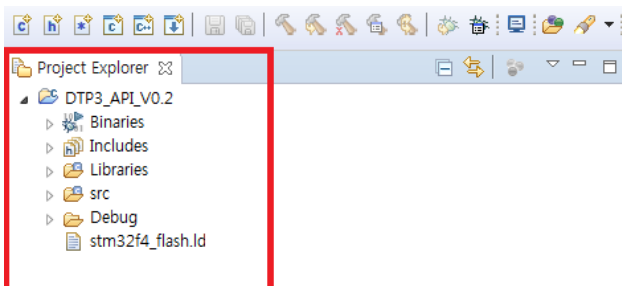
(DTP3_DEVKIT\W02_DTP3_SW\W02_Example\W02_DTP3_API\Company\Atollic\Projects)



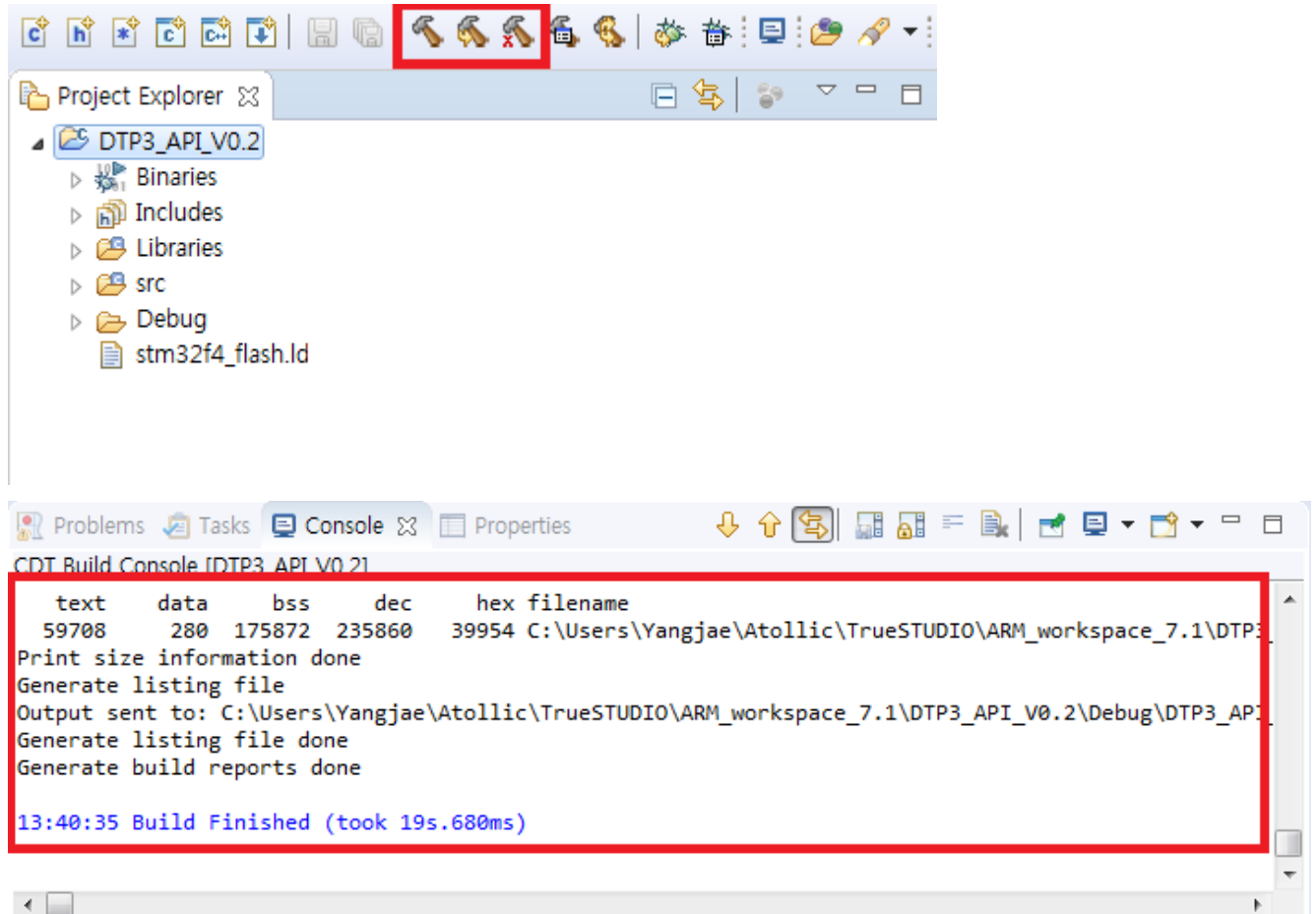
Check for “Copy projects into workspace” and click “Finish” button.



Then added project.



Execute “Rebuild” .

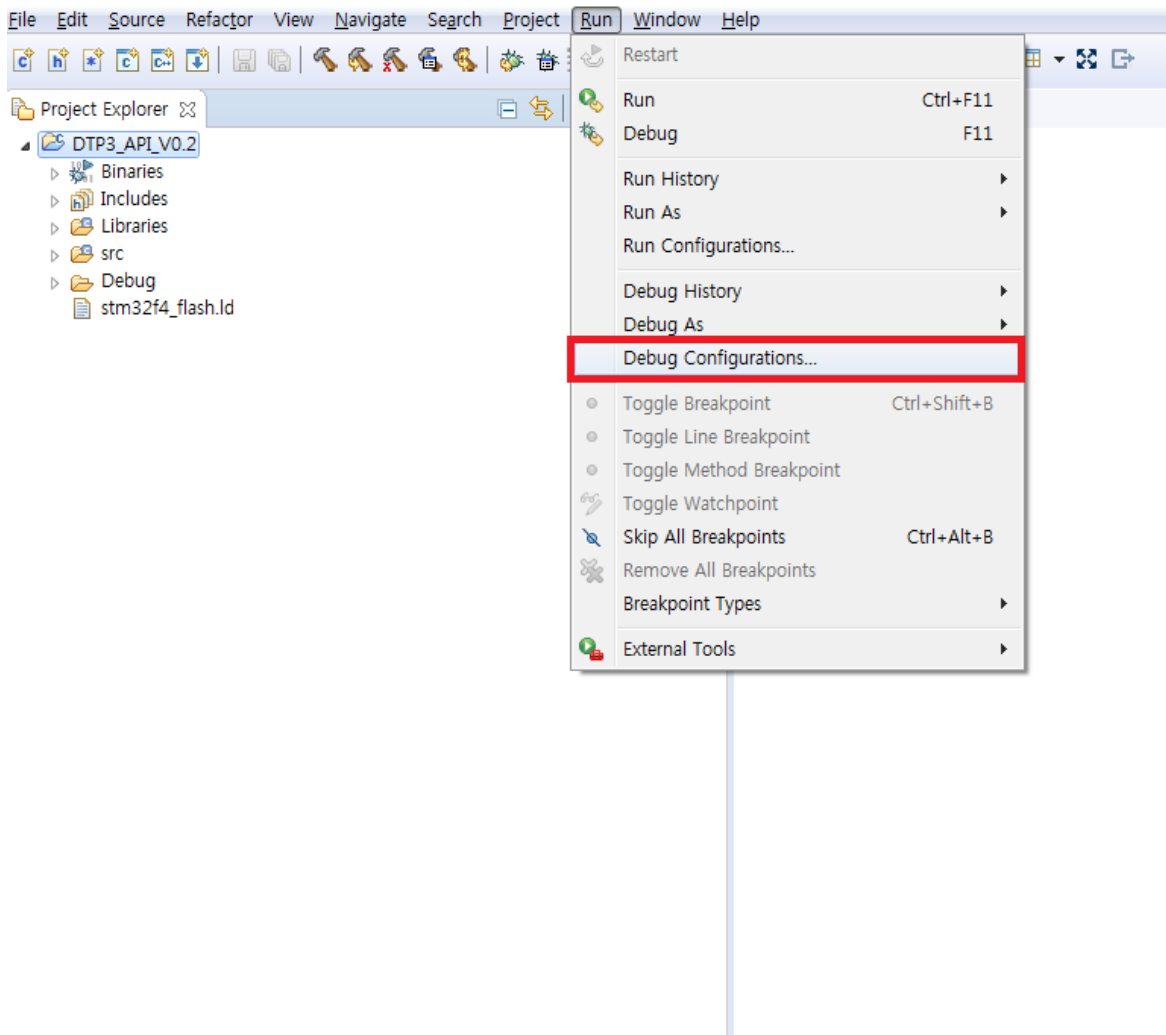


4.2. Sample Project Debugging

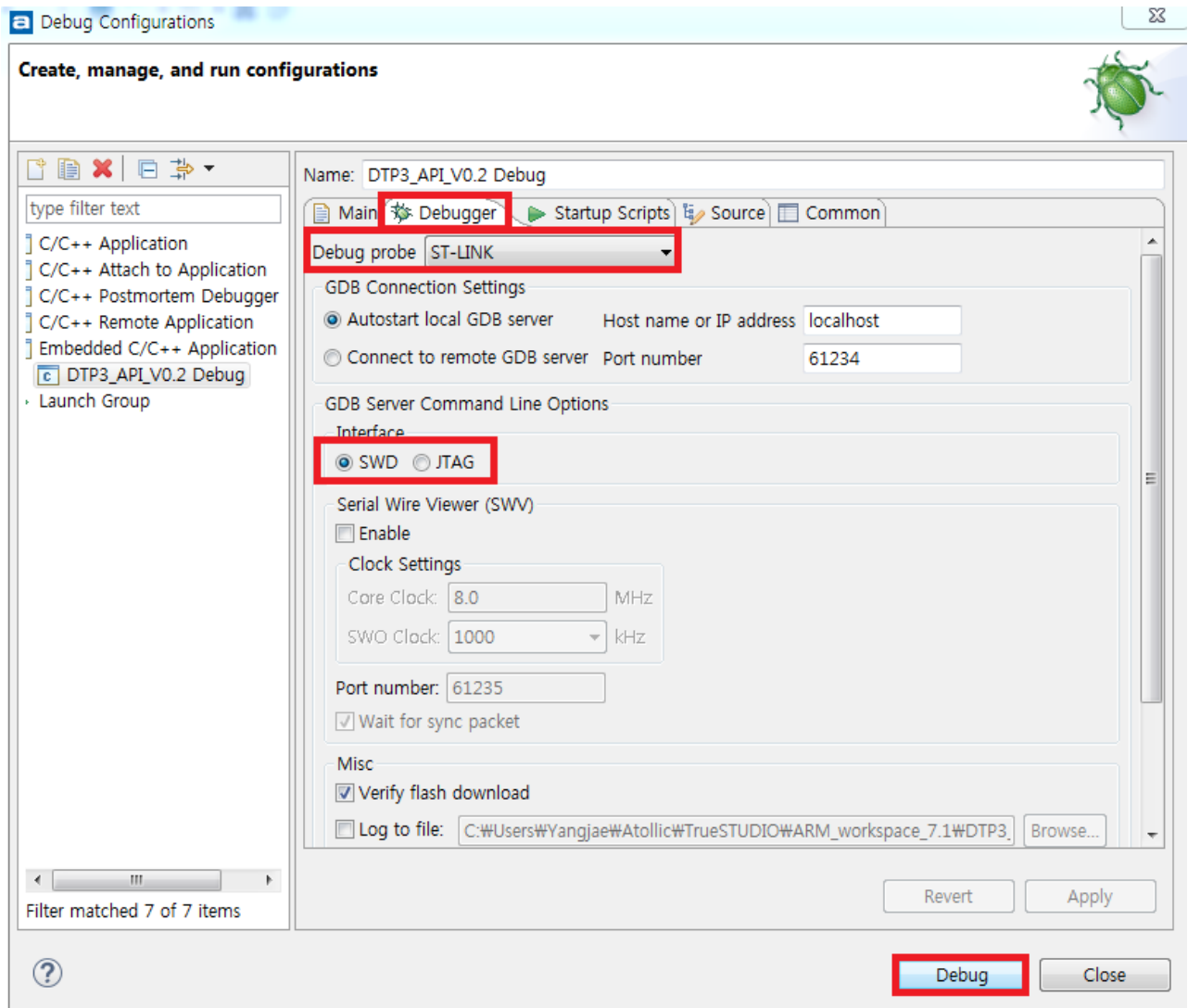
If your DTP3_API Project rebuild success, connect DTP3 and HOST PC with ST-Link/V2.

Connection method refer to 1.2 DTP3 Connecting.

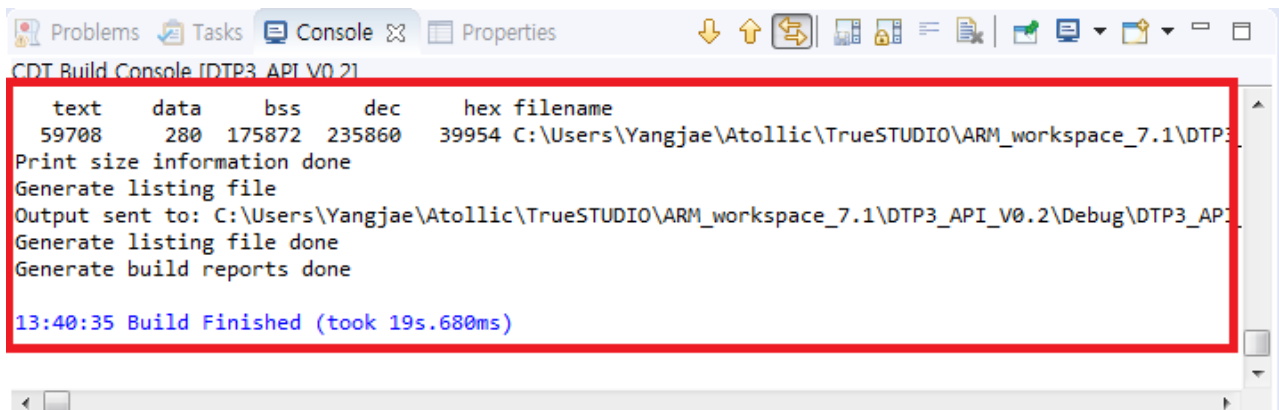
Click “Run → Debug Configurations” .



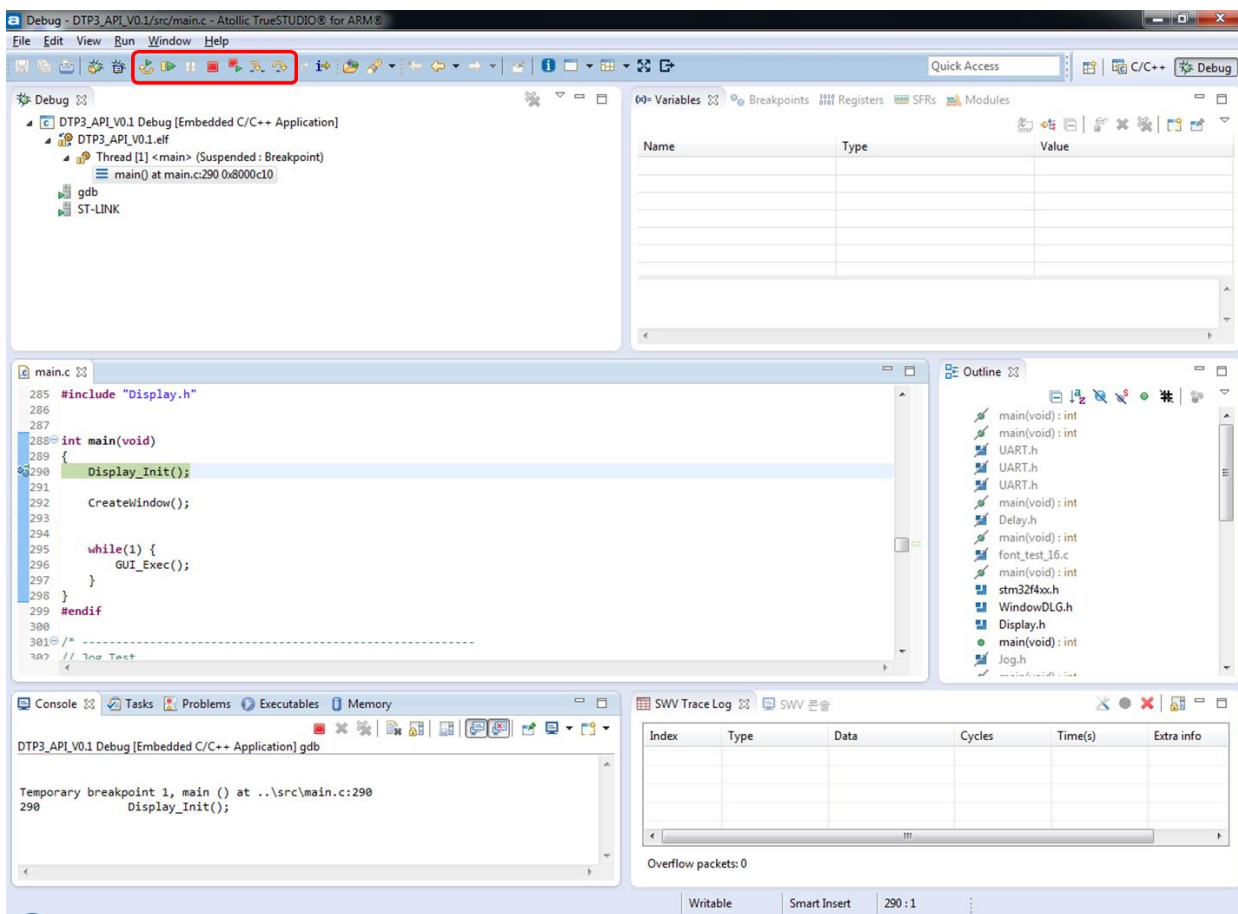
In “Debugger -> Interface”, check “SWD” and click “Debug”



After checking the following debug messages are in progress.



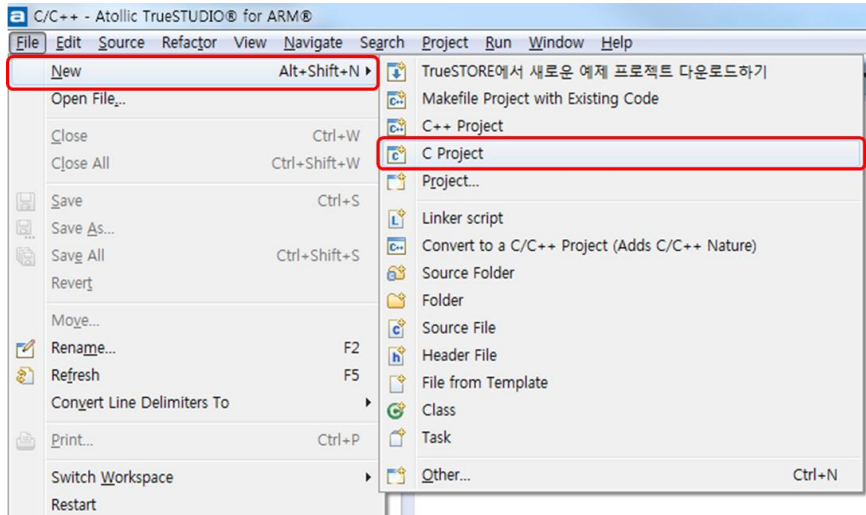
Click “Start debug button.”



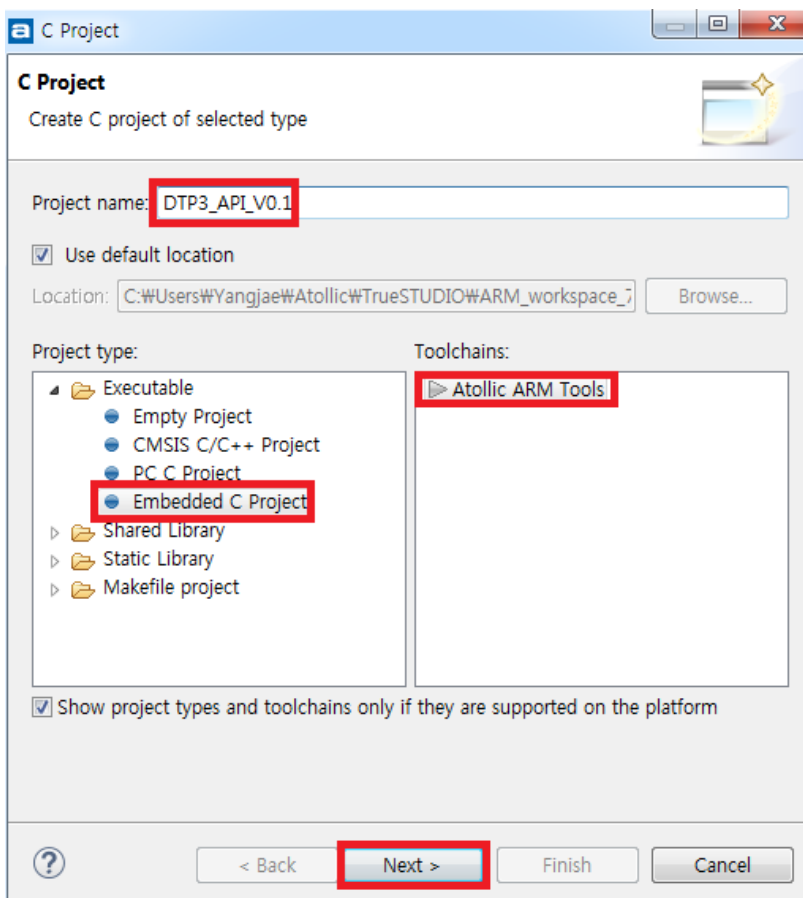
5. Make the New Project

This method is making new project for DTP3 development in TrueSTUDIO10.

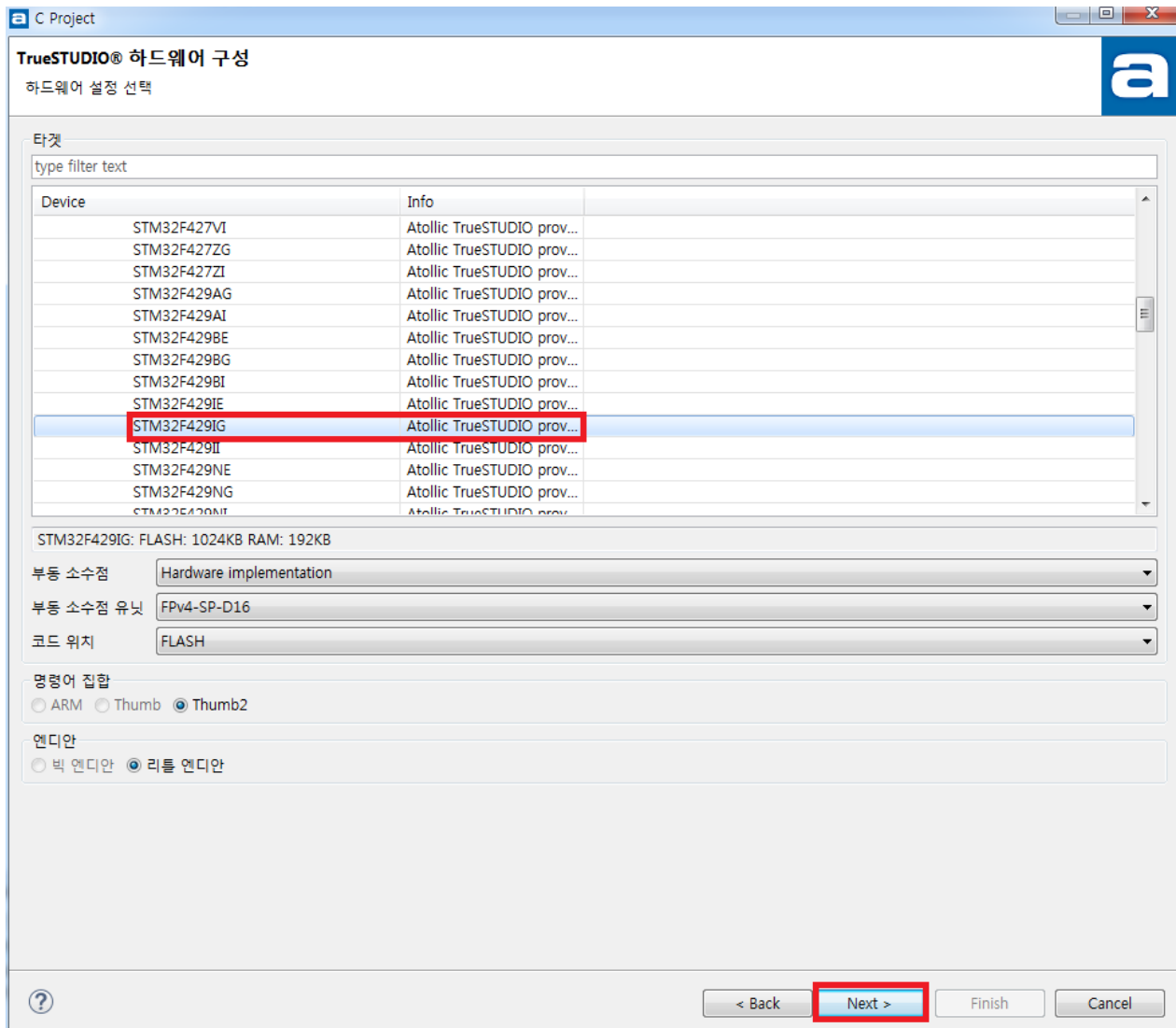
Click “File -> New -> C Project” .



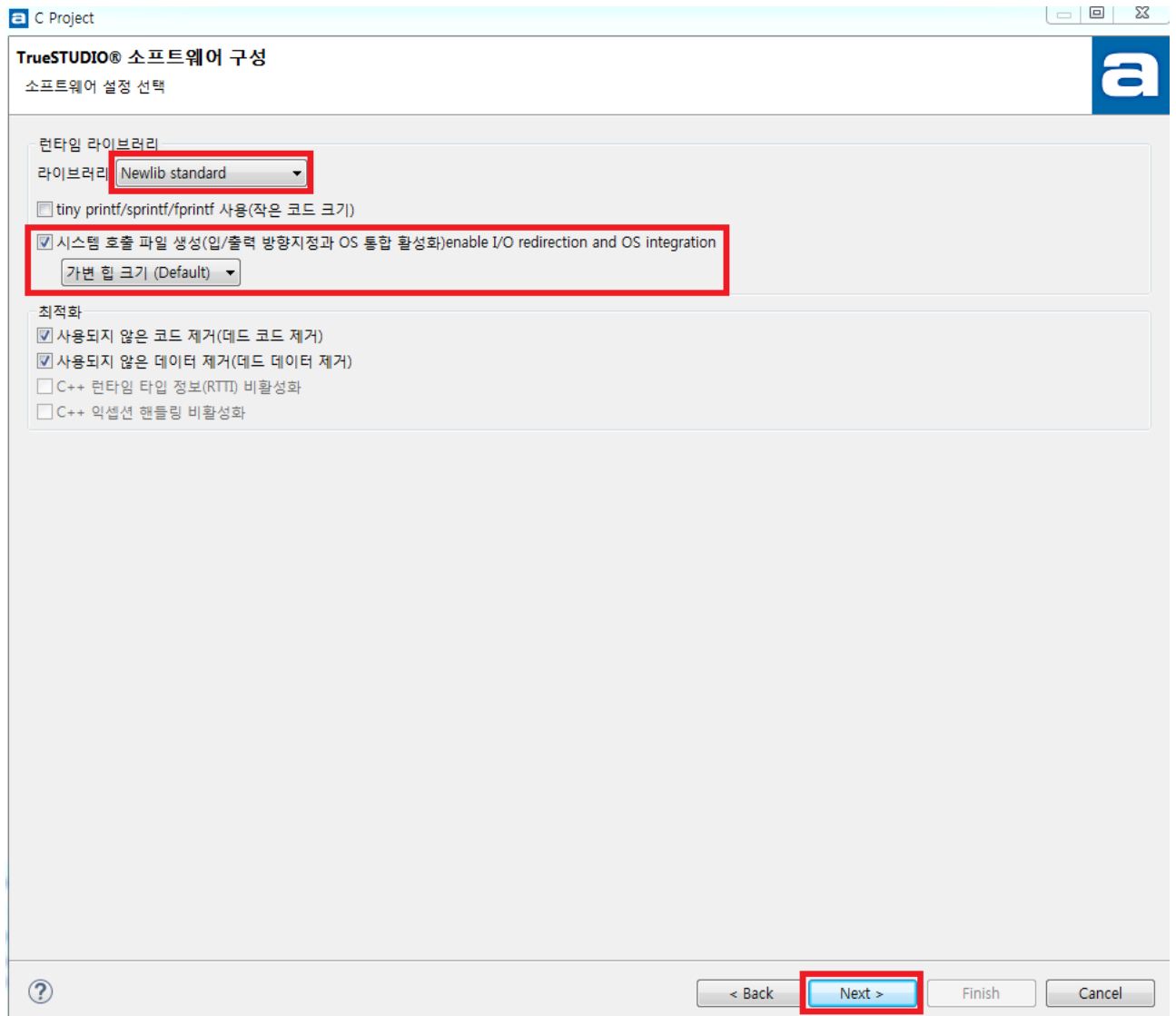
Define project name and select “Embedded C Project” and click “Next” button.



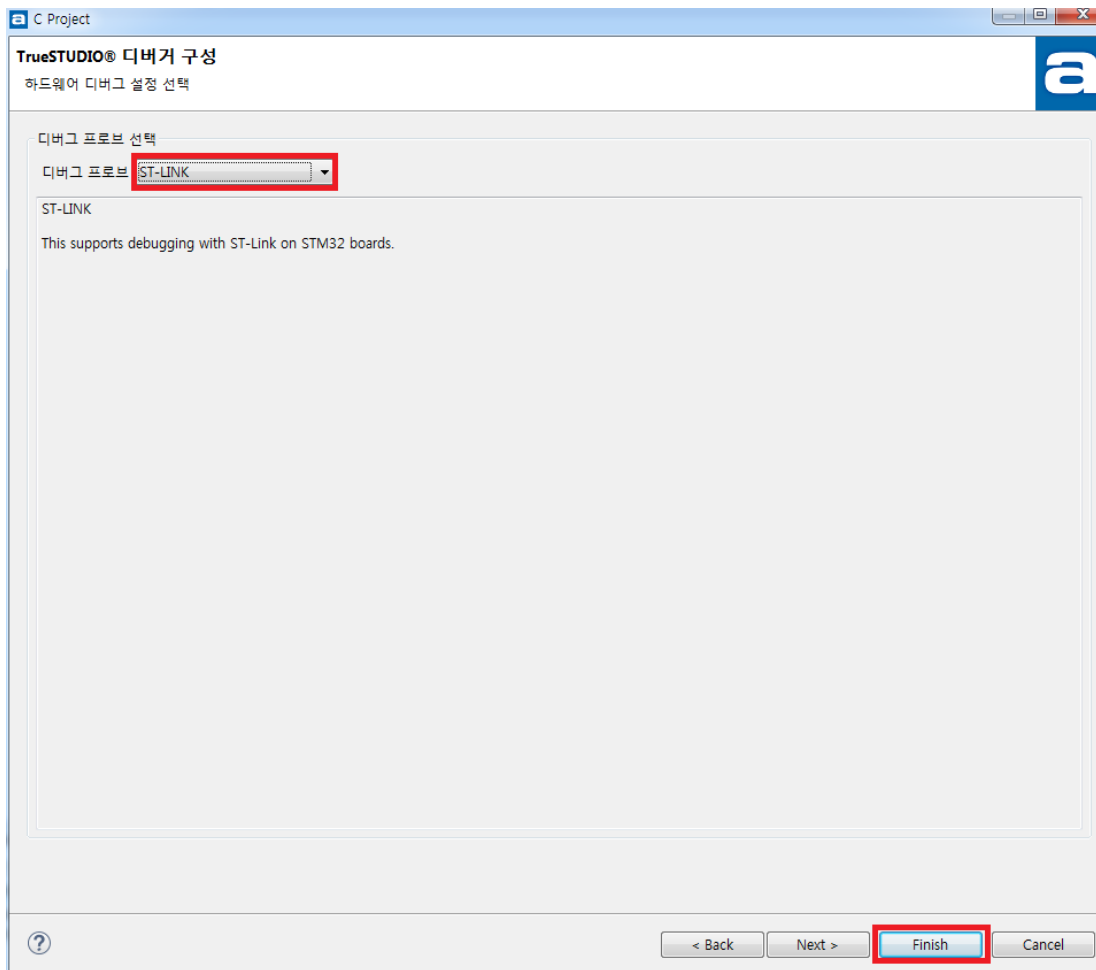
Click “STMicroelectronics”, “MCUs”, “STM32F42xx/43xx devices”, and select “STM32F429IG” and click to “Next” button.



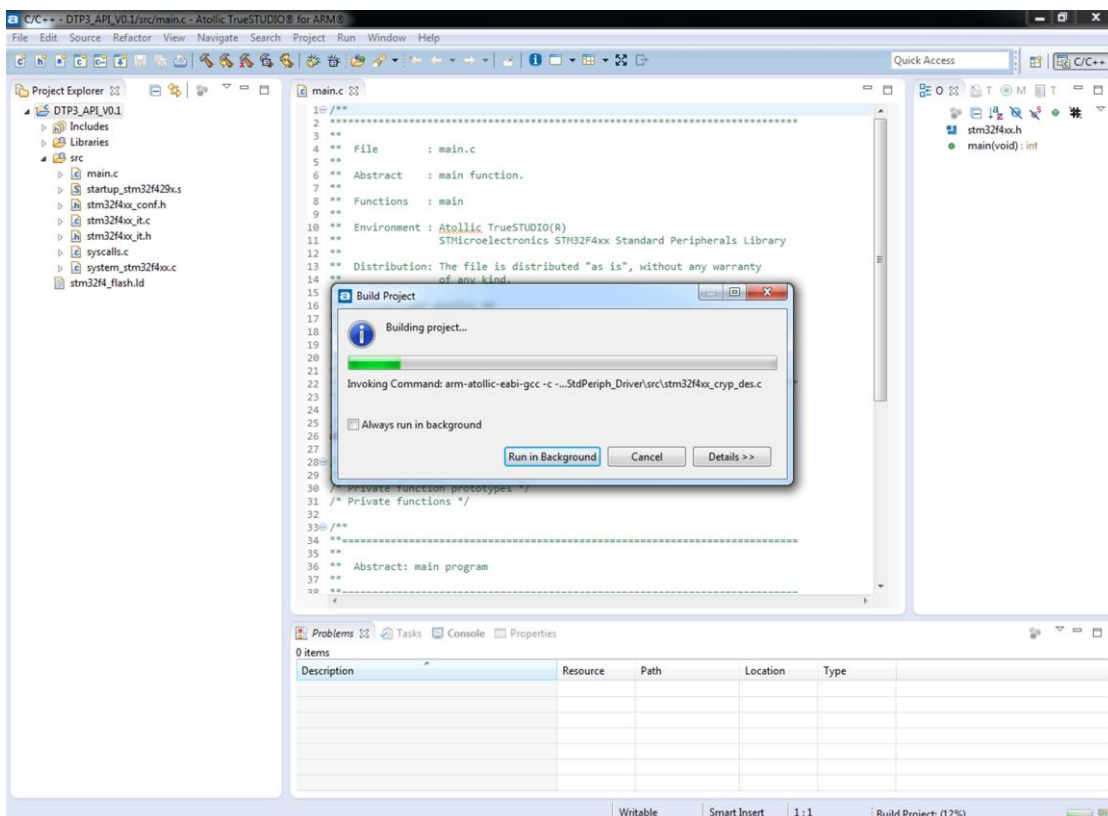
Select refer to below the picture and click “Next” button.



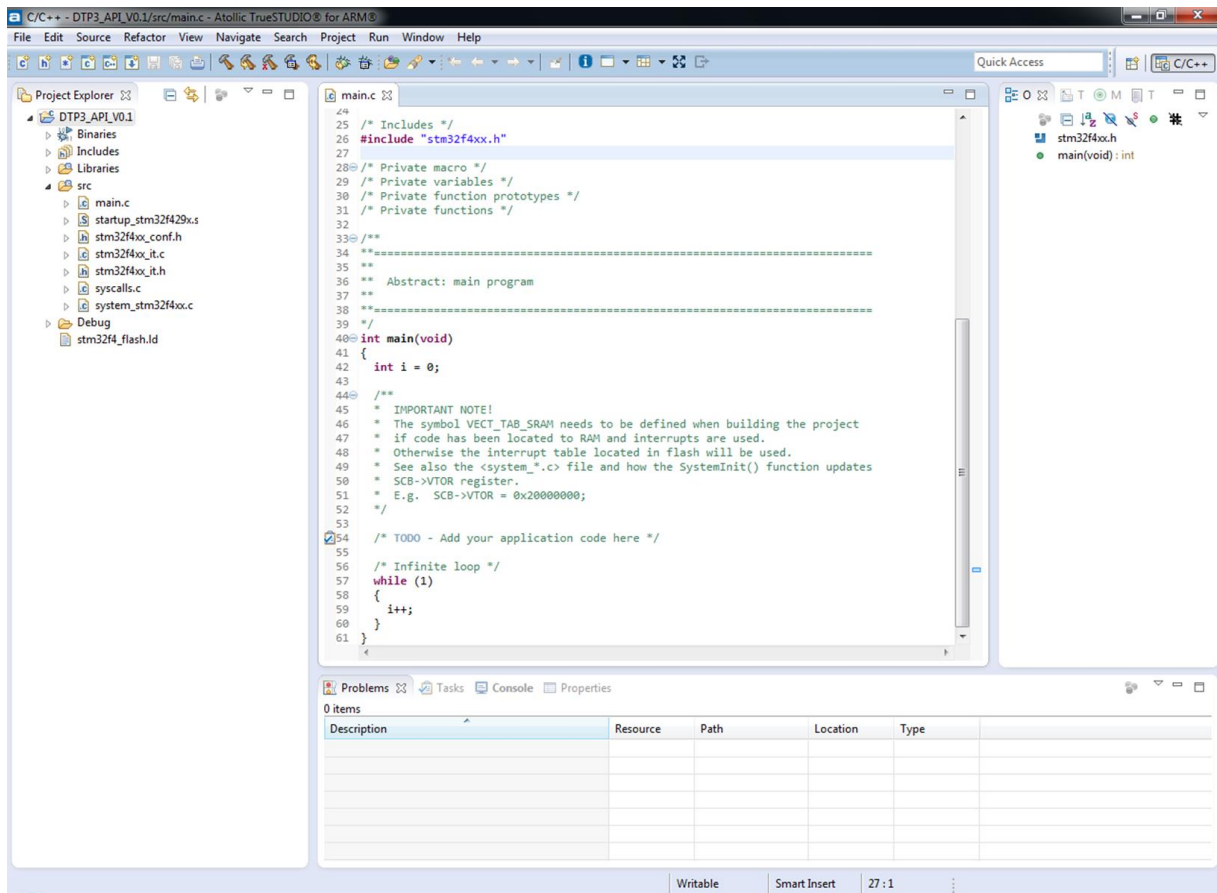
Select “ST-Link” and click “Next” button.



Check on project configuration and click “Finish” button.



This picture is ready to development DTP3.



If project makes success, Copy to DTP3 development library.

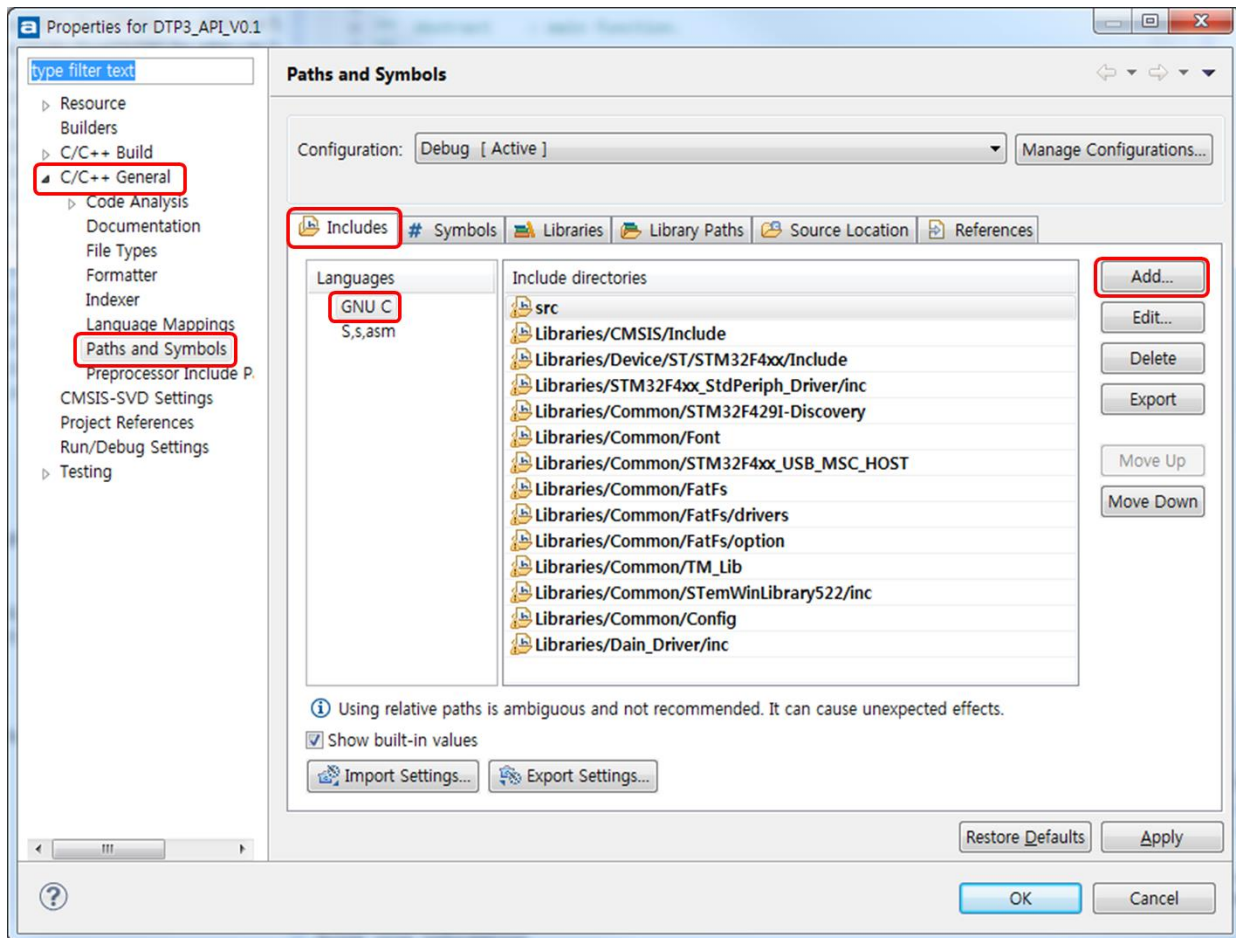
Library needed for development can be found at the following path within the SDK.

Libraries and src folder are copy to new project folder.

(DTP3_DEVKITW02_DTP3_SWW02_Example\TrueSTUDIO\libraries)

(DTP3_DEVKITW02_DTP3_SWW02_Example\TrueSTUDIO\src)

If library copy success, right mouse click the “Project Explorer”. Click Properties → C/C++ General → Paths and Symbols → “Add”. Then add library path refer to below picture.



“Libraries/CommonSTM32F429I-Discovery”

“Libraries/Common/Font”

“Libraries/Common/STM32F4xx_USB_MSC_HOST”

“Libraries/Common/FatFs”

“Libraries/Common/FatFs/drivers”

“Libraries/Common/FatFs/option”

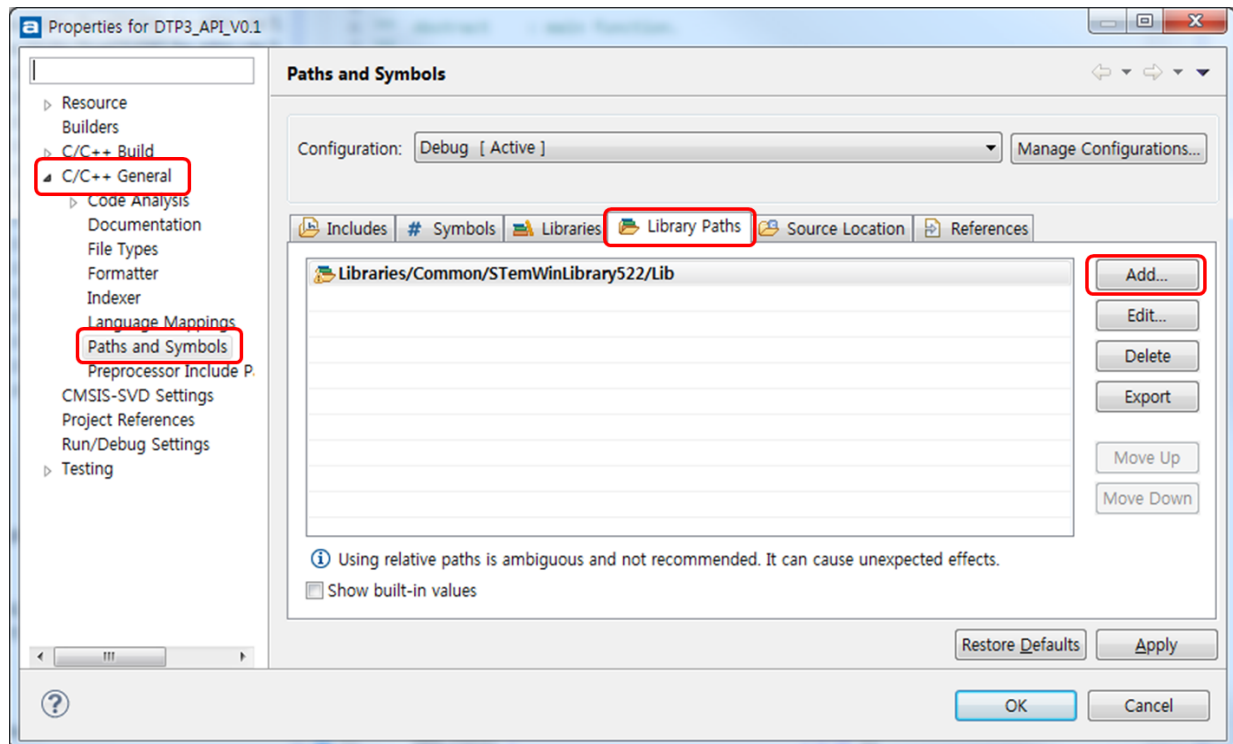
“Libraries/Common/TM_Lib”

“Libraries/Common/STemWinLibrary522/inc”

“Libraries/Common/Config”

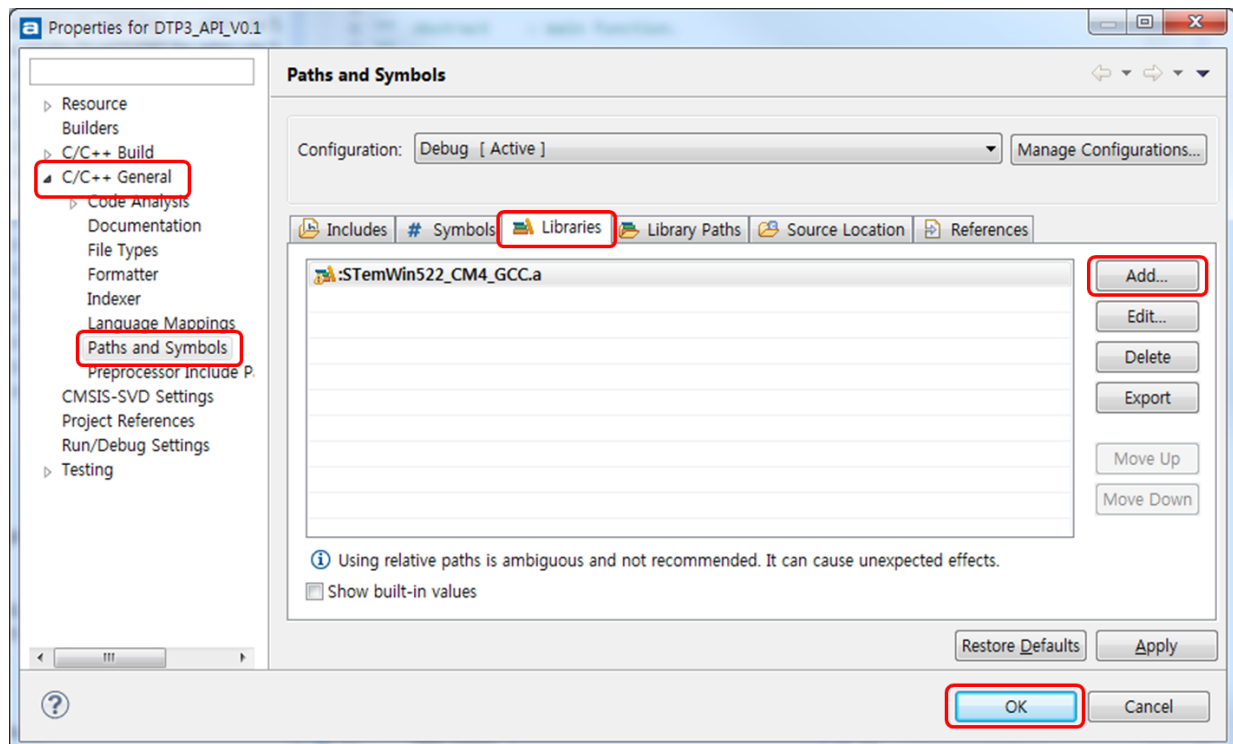
“Libraries/Dain_Driver/inc”

Add GUI Library Path refer to below picture.



“LibrariesCommonSTemWinLibrary522Lib”

Add GUI Library file refer to below picture and click “OK” button.



“:STemWin522_CM4_GCC.a”

6. FAQ.