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GNU17V3
Setup Guide

SEIKO EPSON CORPORATION

Rev.2.0

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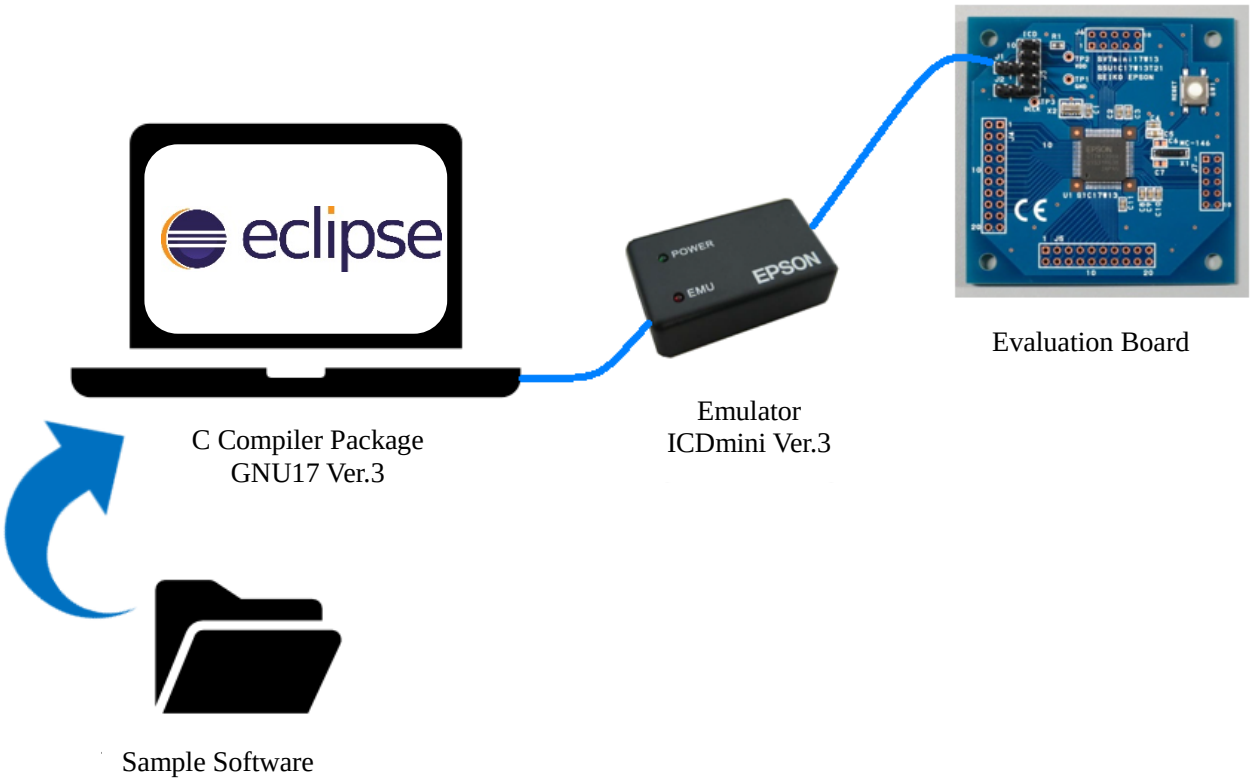
Table of Contents

1. Introduction

The purpose of this document is to setup *Seiko Epson 16bit Microcontroller S1C17 Family* development environments easily.

This setup guide explains how to install the C compiler package, which is *GNU17V3*, import sample projects, build the projects, connect an emulator and an evaluation board, and execute the program.



2. Outline of Software Tools

Word	Explanation
• S1C17Family	Seiko Epson 16-bit Microcontroller Family
• GNU17V3 IDE	Development Environment structured by S1C17 Family C Compiler package for program development.
• ICDmini Ver.2 (S5U1C17001H2) • ICDmini Ver.3 (S5U1C17001H3)	Hardware Tool (Emulator) for S1C17 Family software development.
• Evaluation Board	S1C17 Family Evaluation Board. In this Setup Guide, S5U1C17W13T (SVTmini17W13) is used.
• Sample Project V3	S1C17Family Sample Project for GNU17V3.

3. Working Environment

To use the S1C17 Family C Compiler Package, the following conditions are necessary:

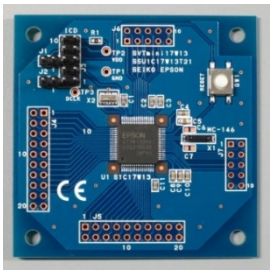
- Personal Computer（Windows10 is the OS which is used in this setup guide）
  - To download S1C17Family C compiler package (*GNU17V3.*)
  - To download sample projects.

- Emulator S5U1C17001H3 (this is called as “ICDminiV3” from now on.)

or

S5U1C17001H2 (this is called as “ICDminiV2” from now on.)

- Evaluation board for S1C17Family
  (S5U1C17W13T is used in this setup guide (this is called as “SVTmini17W13” from now on)

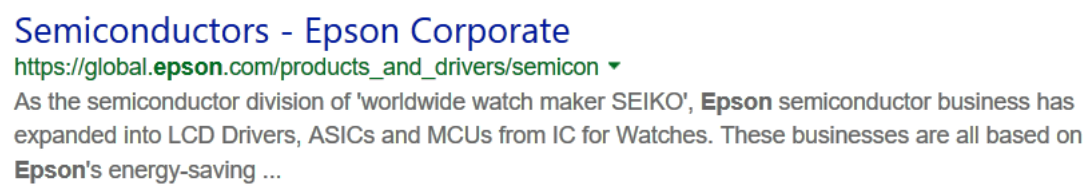


4. The procedure to install C compiler package (GNU17V3)

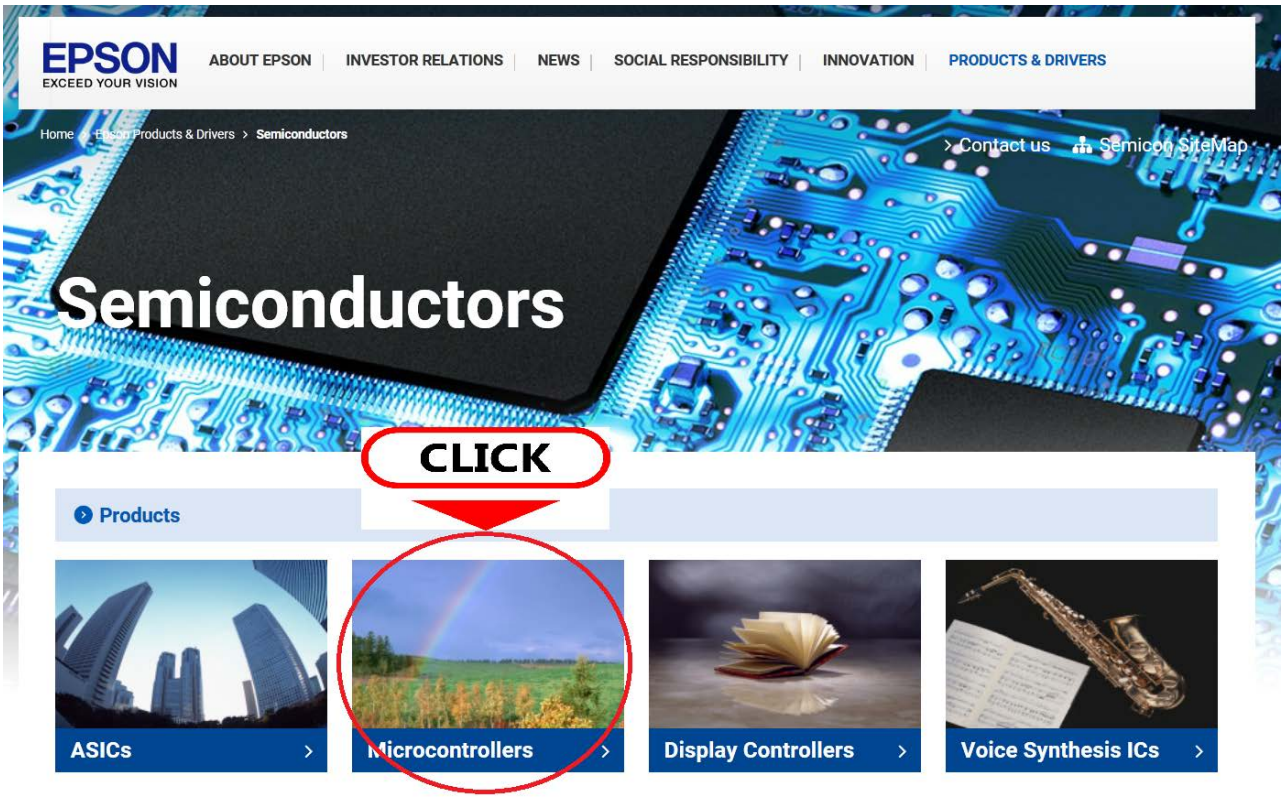
4.1 Please search [EPSON semiconductors] via the internet.

（URL：https://global.epson.com/products_and_drivers/semicon/）

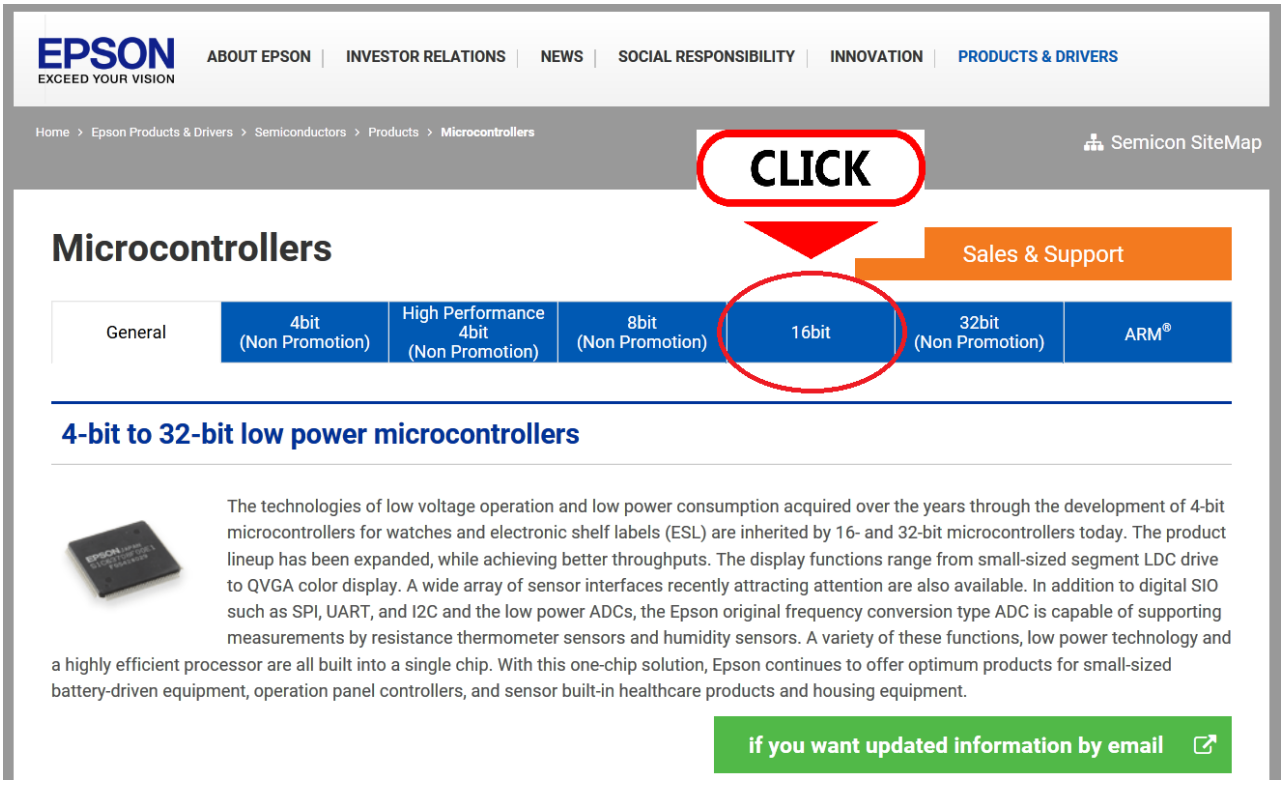
4.2 Please access to the Epson semiconductors web site.



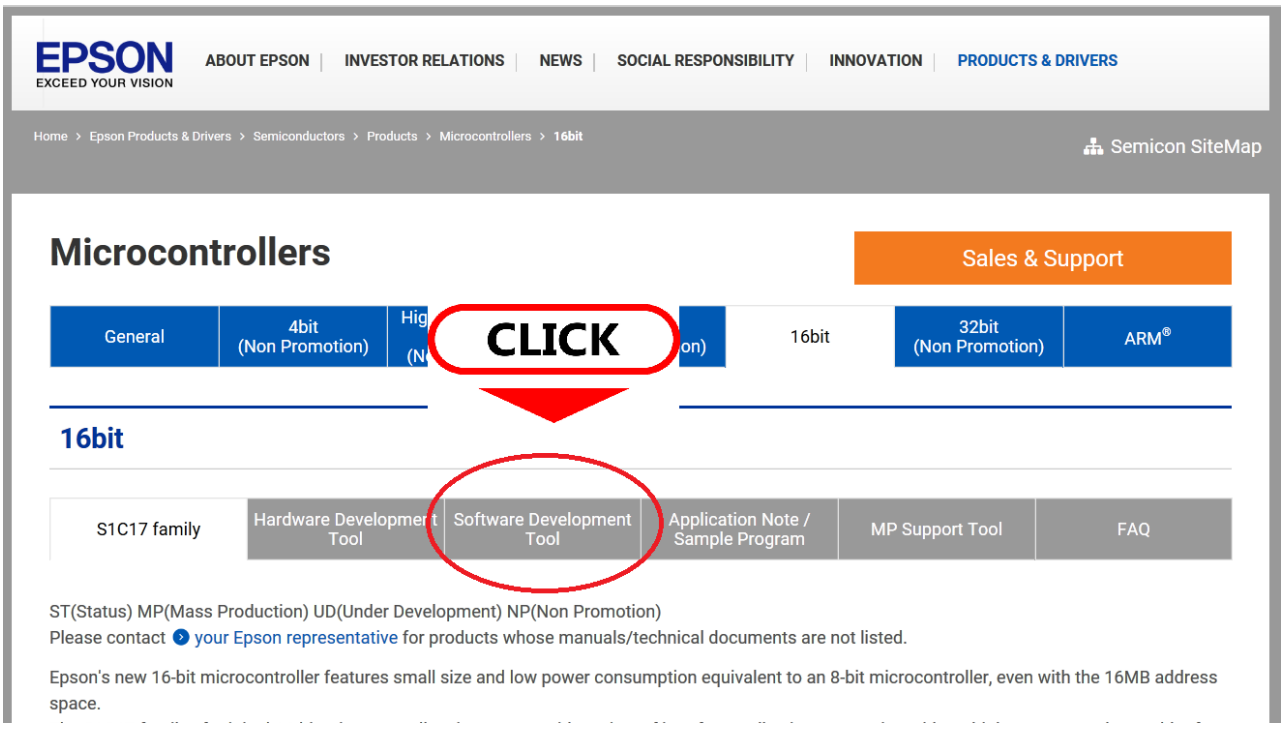
4.3 Please click on [Microcontrollers].



4.4 Please click on [16bit] tab.



4.5 Please click on [Software Development Tool]



4.6 Please download and save [GNU17 Ver3.1.2 Full version].

(It takes a couple minutes to download.)

16bit

S1C17 family	Hardware Development Tool	Software Development Tool	Application Note / Sample Program	MP Support Tool	FAQ

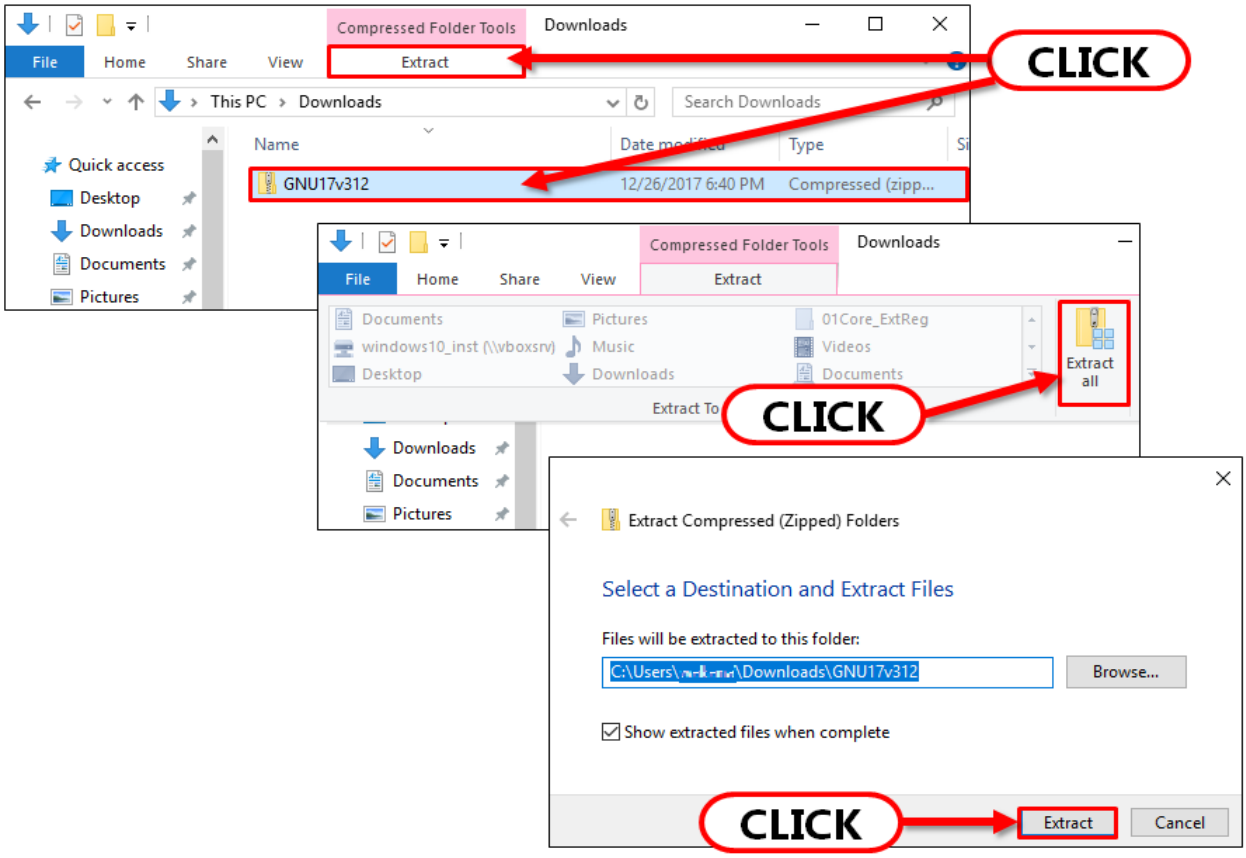
Software Development Tool

GNU17 IDE

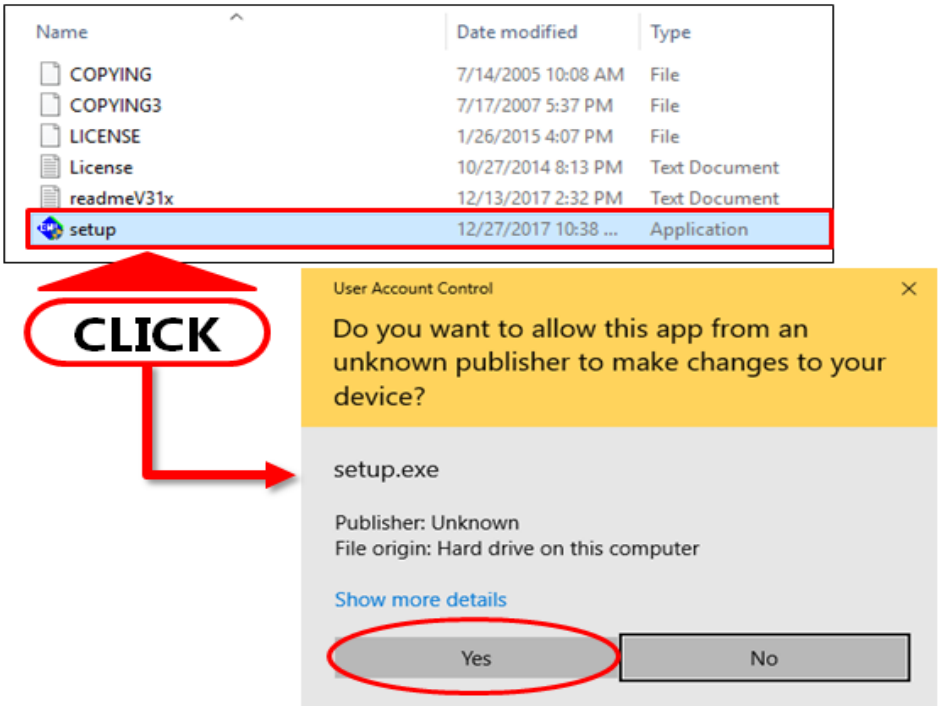
Items	GNU17 Ver.2.4.0 Full version	GNU17 Ver.3.1.2 Full version
Package	2015/12/25 (158MB) * Need to update USB Driver	2018/1/19 (282MB)
Eclipse (IDE)	Ver.3.4.0	Ver.4.5.2
Langage	English/Japanese	English (multilingualization by Plug-ins)
Supported gcc options	-O0, -O1, -O3(performance)	-O0, -O1, -O2, -O3(performance), -Os(size)
Build speed	Normal	Fast

4.7 When the download is completed, please click on [Open Files.] When the security window shows up, please click on [Accept.]

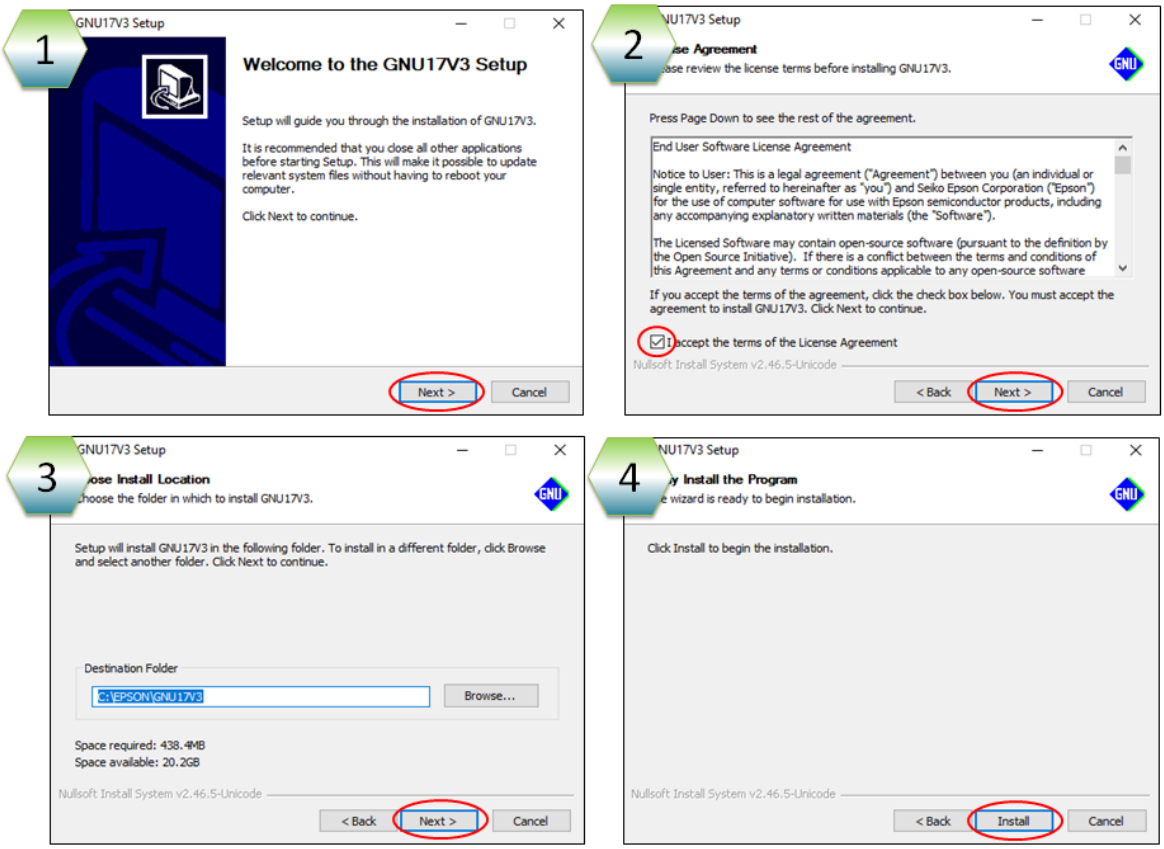
4.8 Since the downloaded GNU17 is a zip file, it must be unzipped. Please select an appropriate folder to unzip, and unzip the zip file. (In this guide, the file is unzipped to the folder [Downloads].)



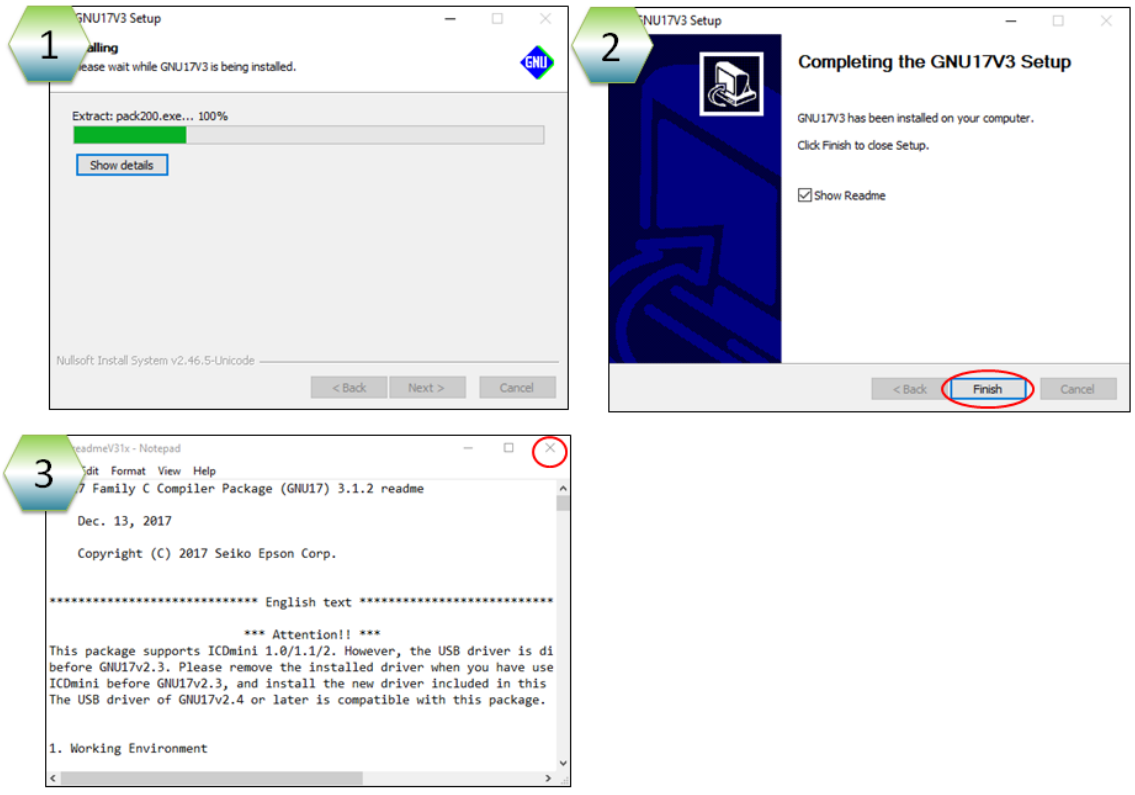
4.9 Please Double-Click on [setup.exe] to start setting up.



4.10 Please continue setting up.

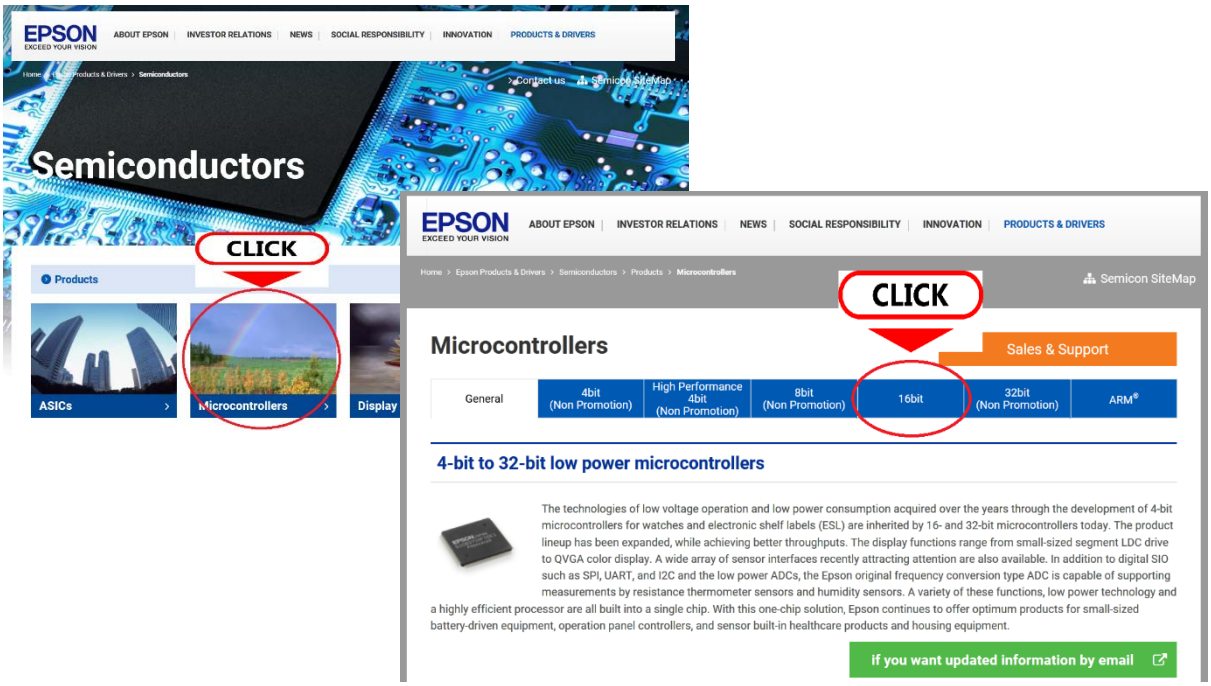


4.11 Installation is completed (Please read the Readme document, and close it.)

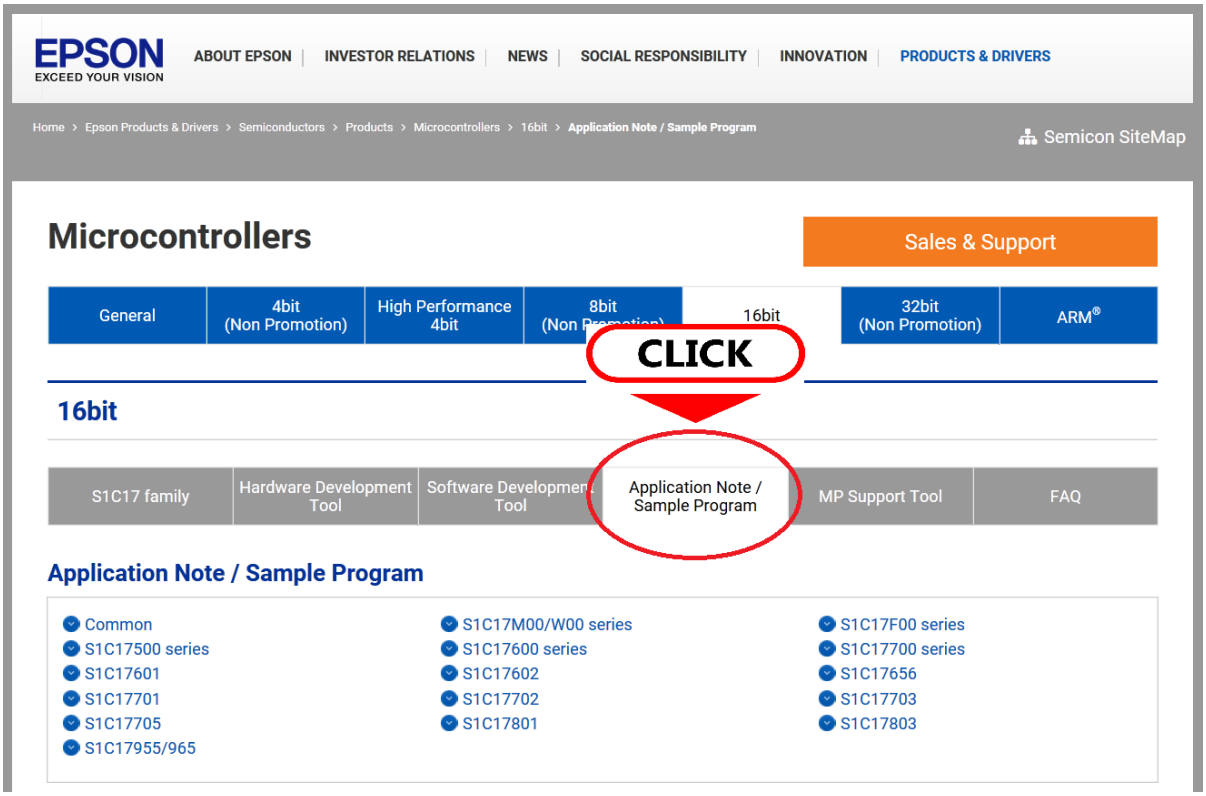


5. Importing sample projects

5.1 Please repeat the procedure 4.1 - 4.4.

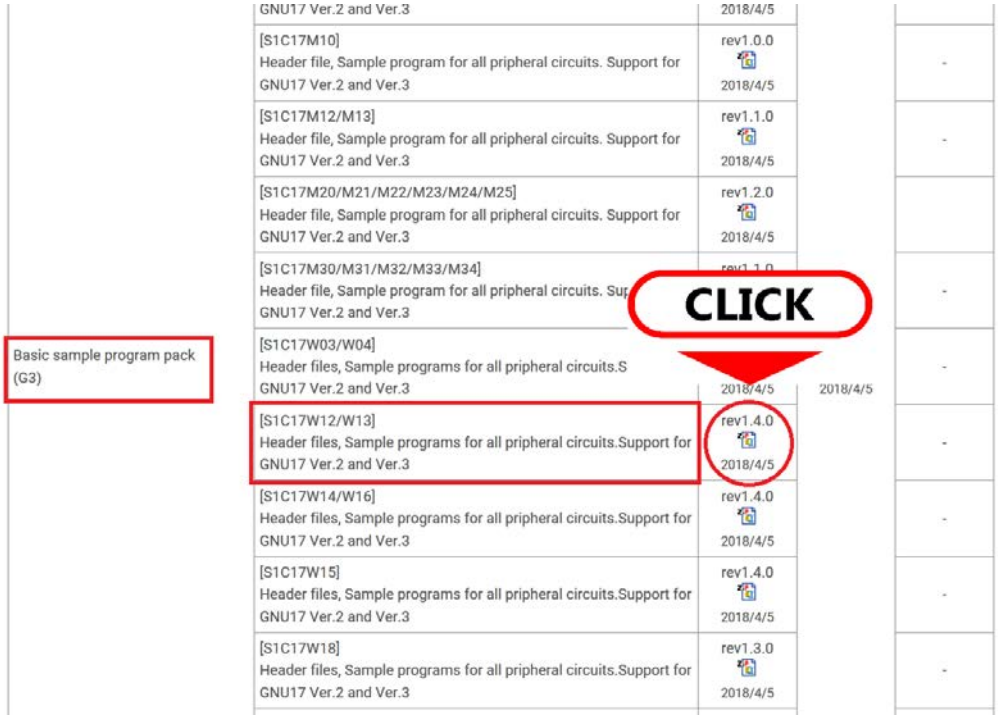


5.2 Please click on [Application Note / Sample Program].

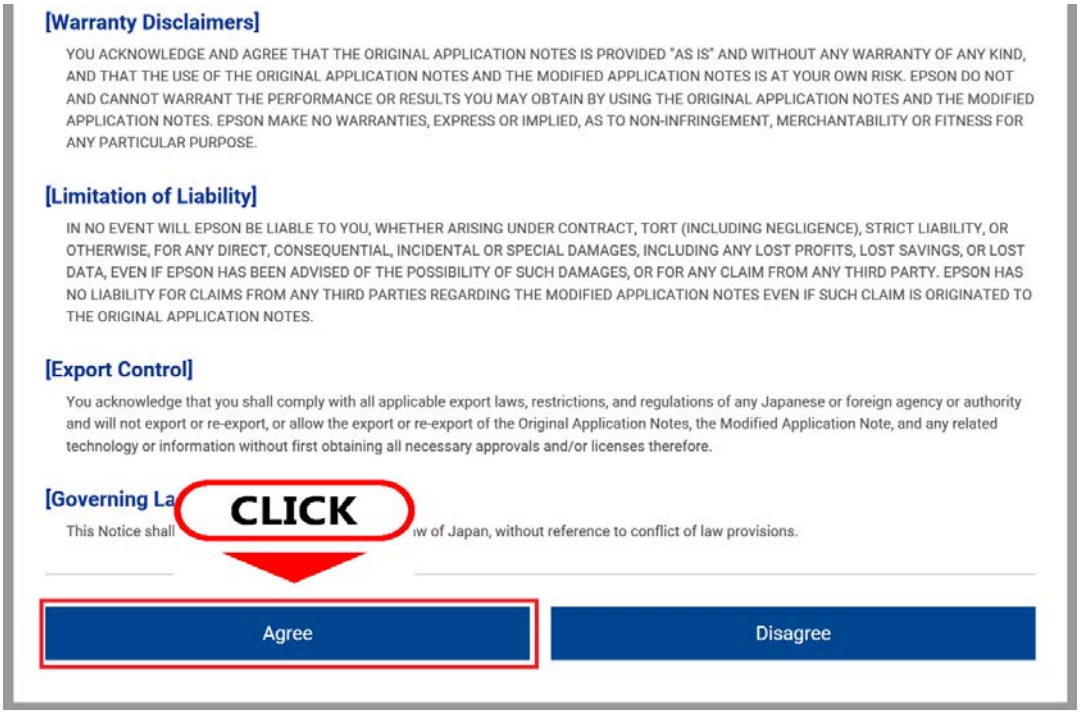


5.3 Please select an appropriate sample project.

Please select a Basic sample program pack (G3) that corresponds the evaluation board. In this setup guide, under [Product: S1C17M00/W00 series,] Basic sample program pack (G3) [S1C17W12/W13] is used because [SVTmini17W13] is the used evaluation board here.

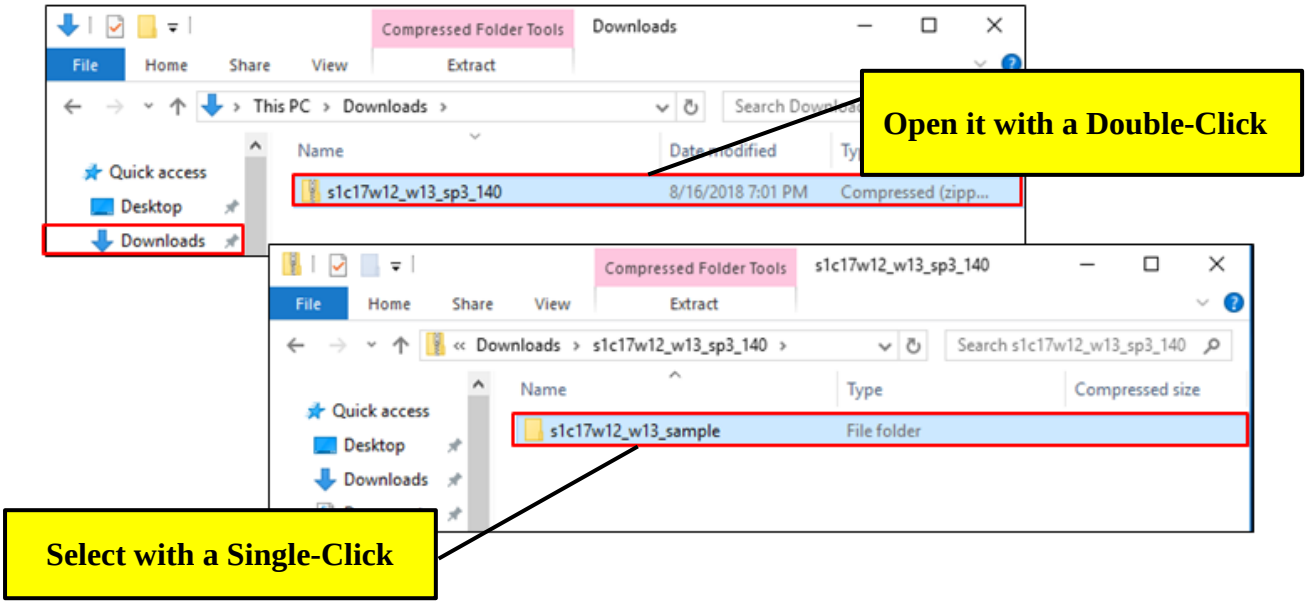


5.4 Please read [End User Software License Agreement], and click on [Agree] to continue.

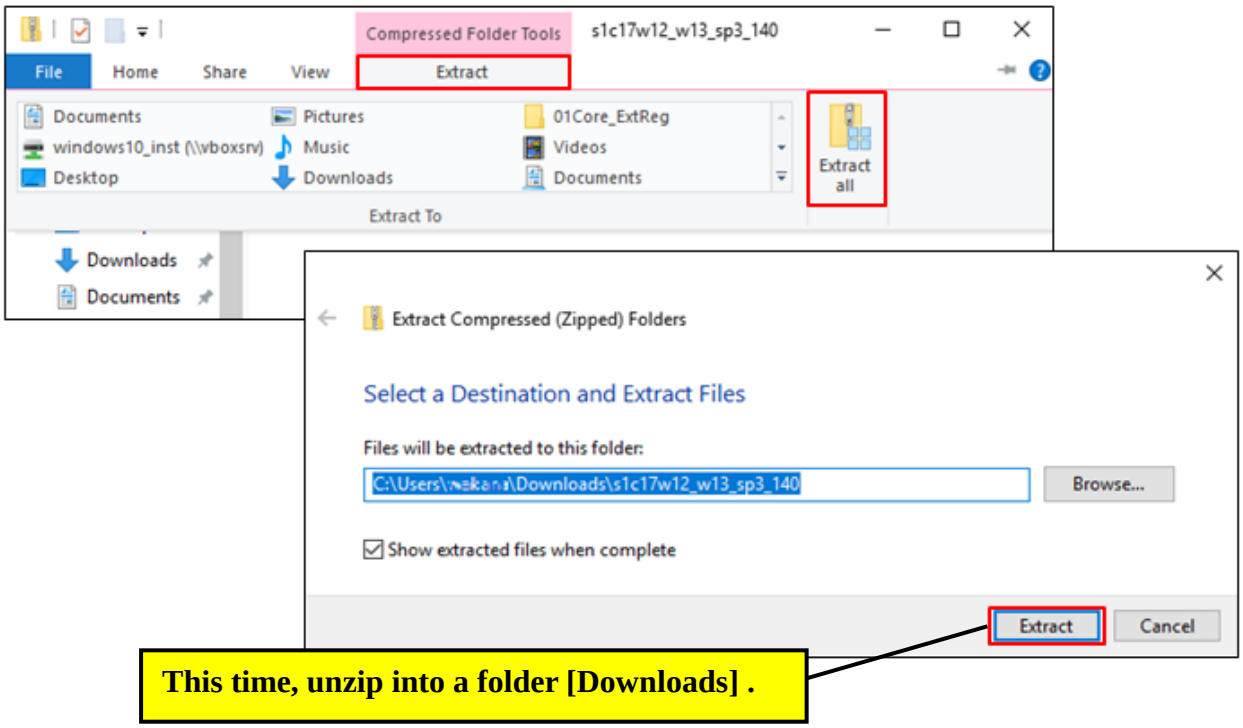


5.5 Please download and save the file.

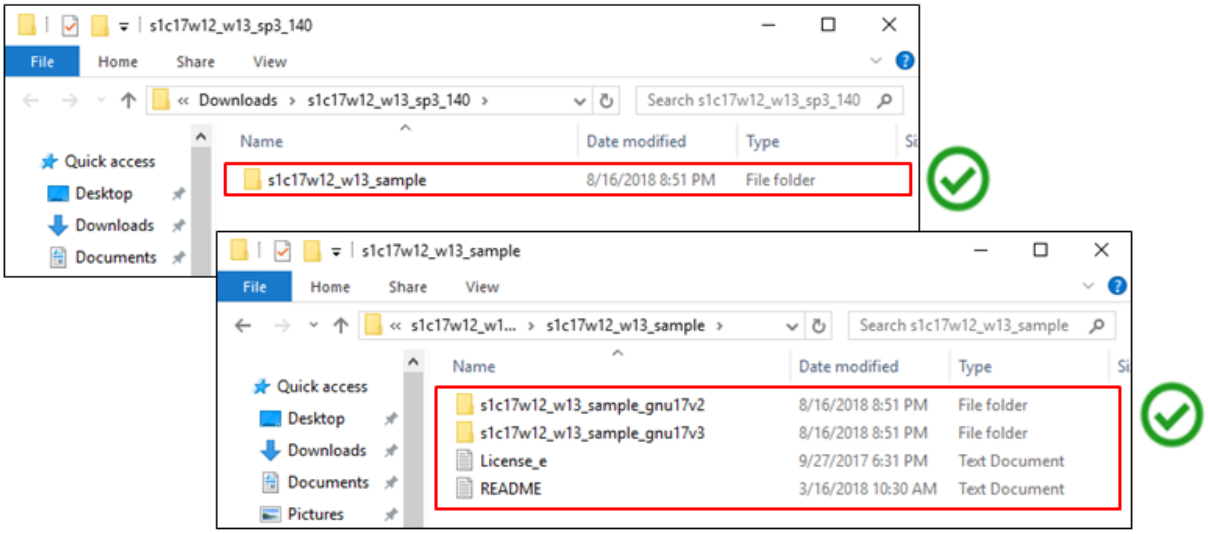
5.6 Please check if a zip file is successfully downloaded under [PC] > [Downloads], open it with a Double-Click, and select the zip file with a Single-Click.



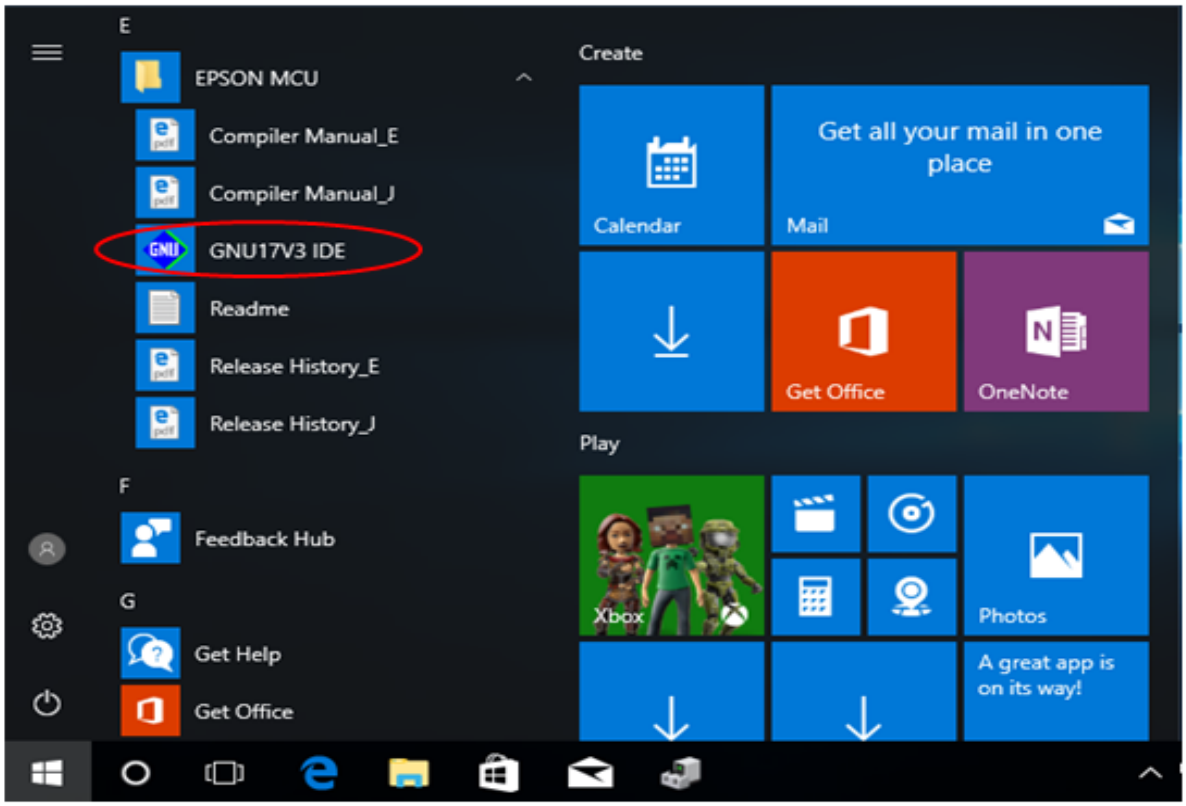
5.7 Please select an appropriate zip file, choose a folder to unzip, and unzip the file.



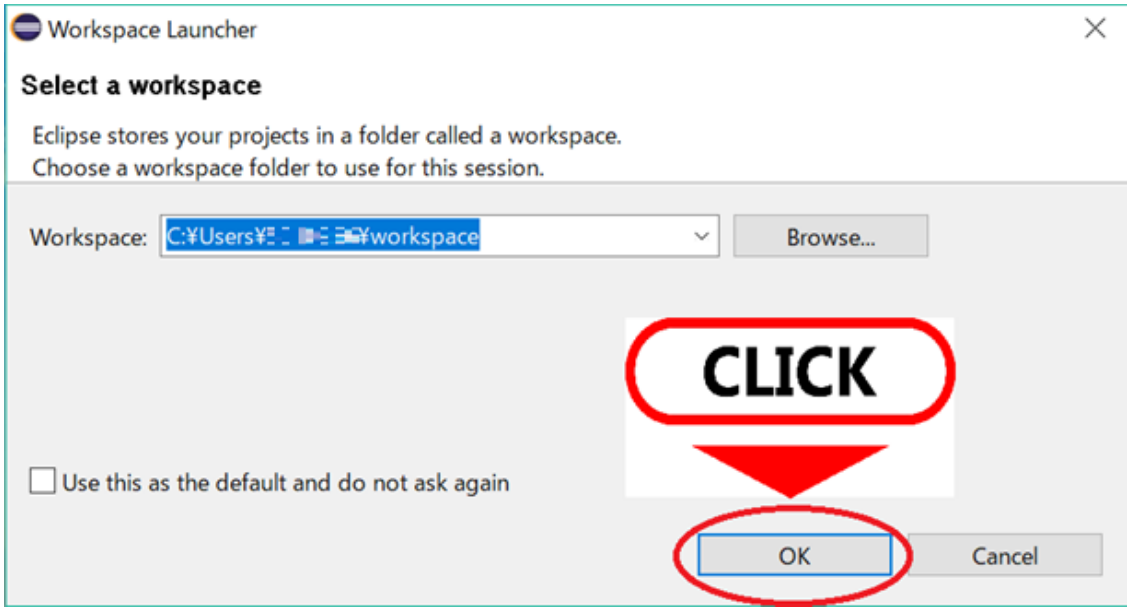
5.8 Please check if there is an unzipped sample program in the selected folder. This is the end of the download of sample projects.



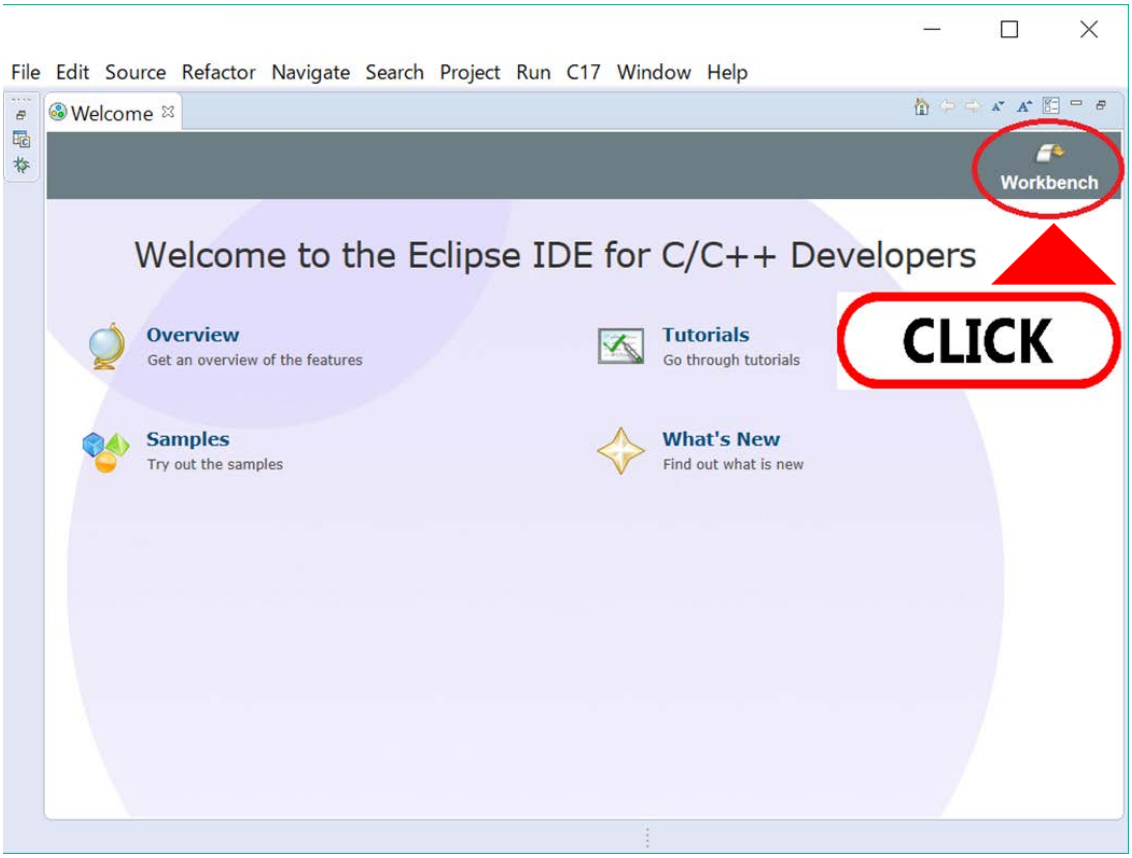
5.9 To start GNU17, please start from Windows Startup Menu, and continue in order of [EPSON MCU] > [GNU17V3 IDE].



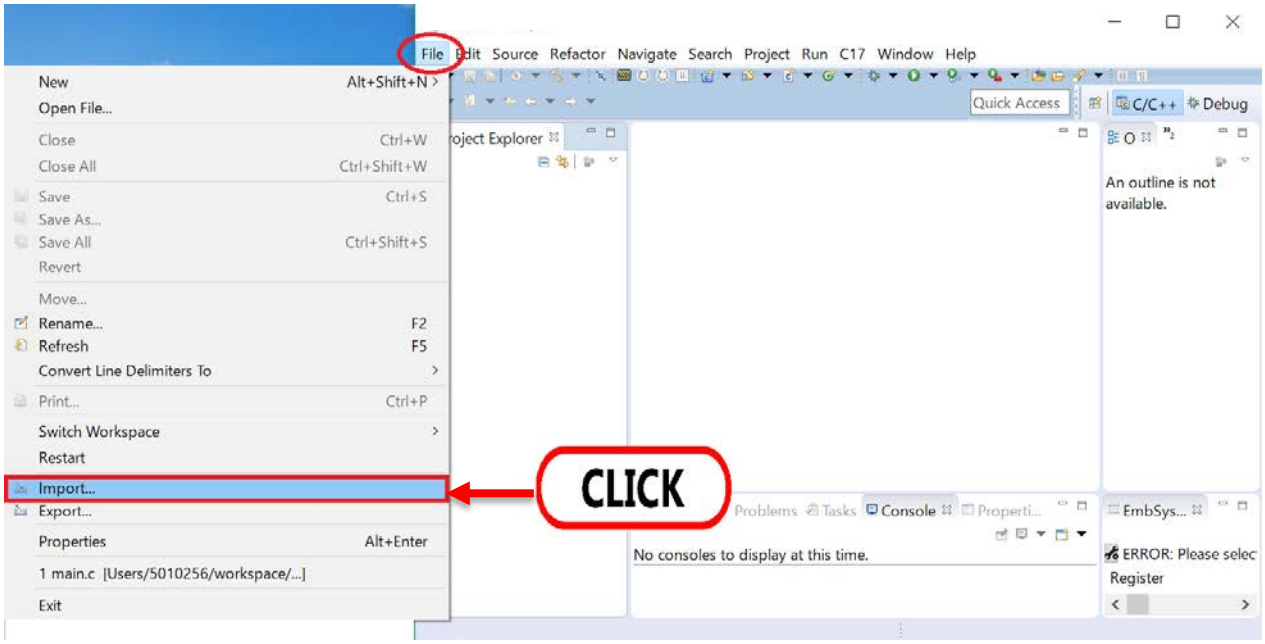
5.10 Please select a Workspace.



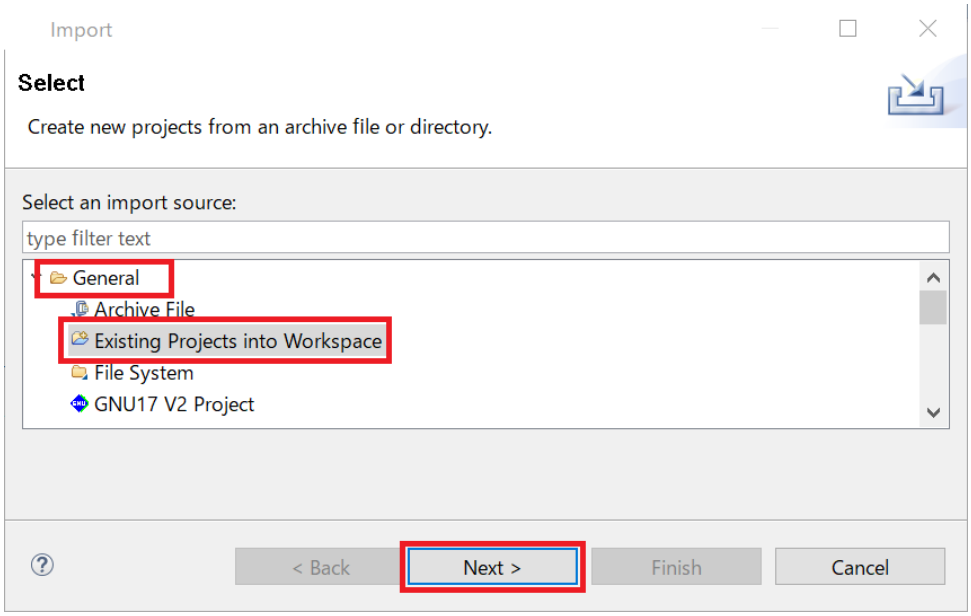
5.11 After a while, GNU17 is started. Please click on [Workbench] to close the Welcome window (the welcome window shows up only the initial startup.)



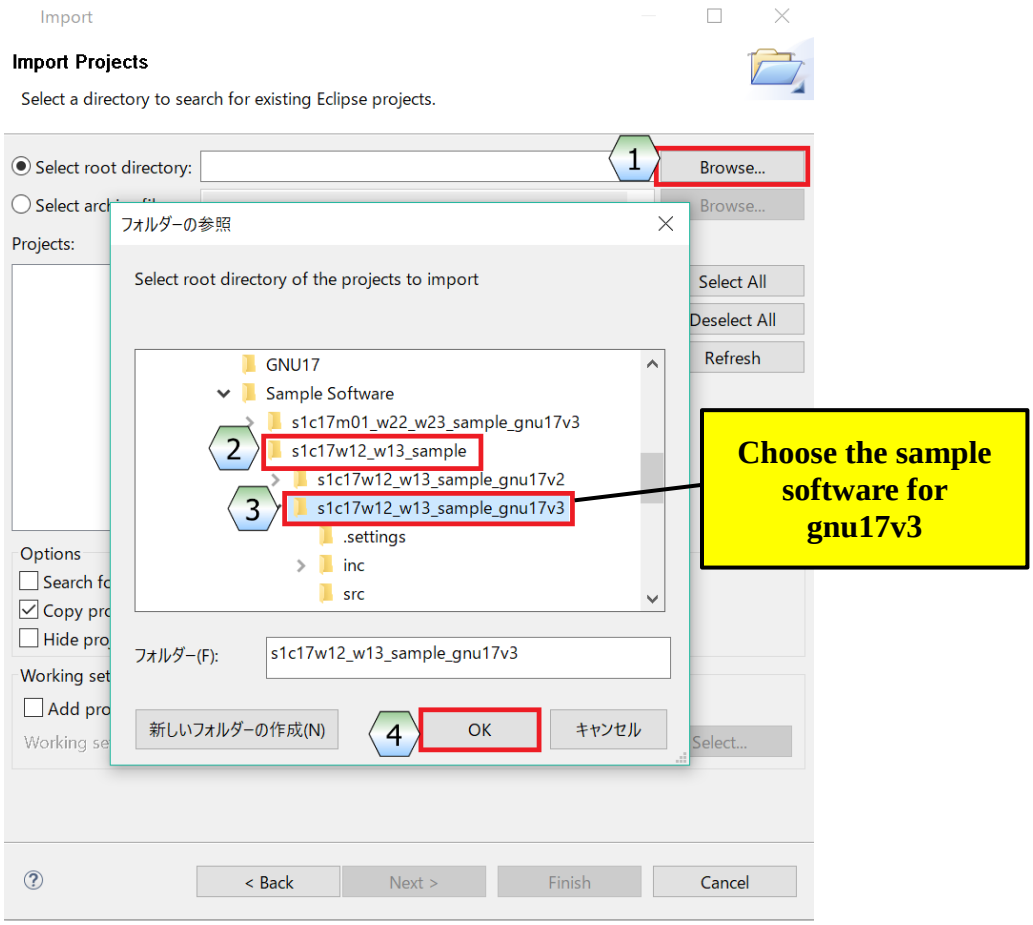
5.12 Please click on [File] at the upper left corner, and select [Import].



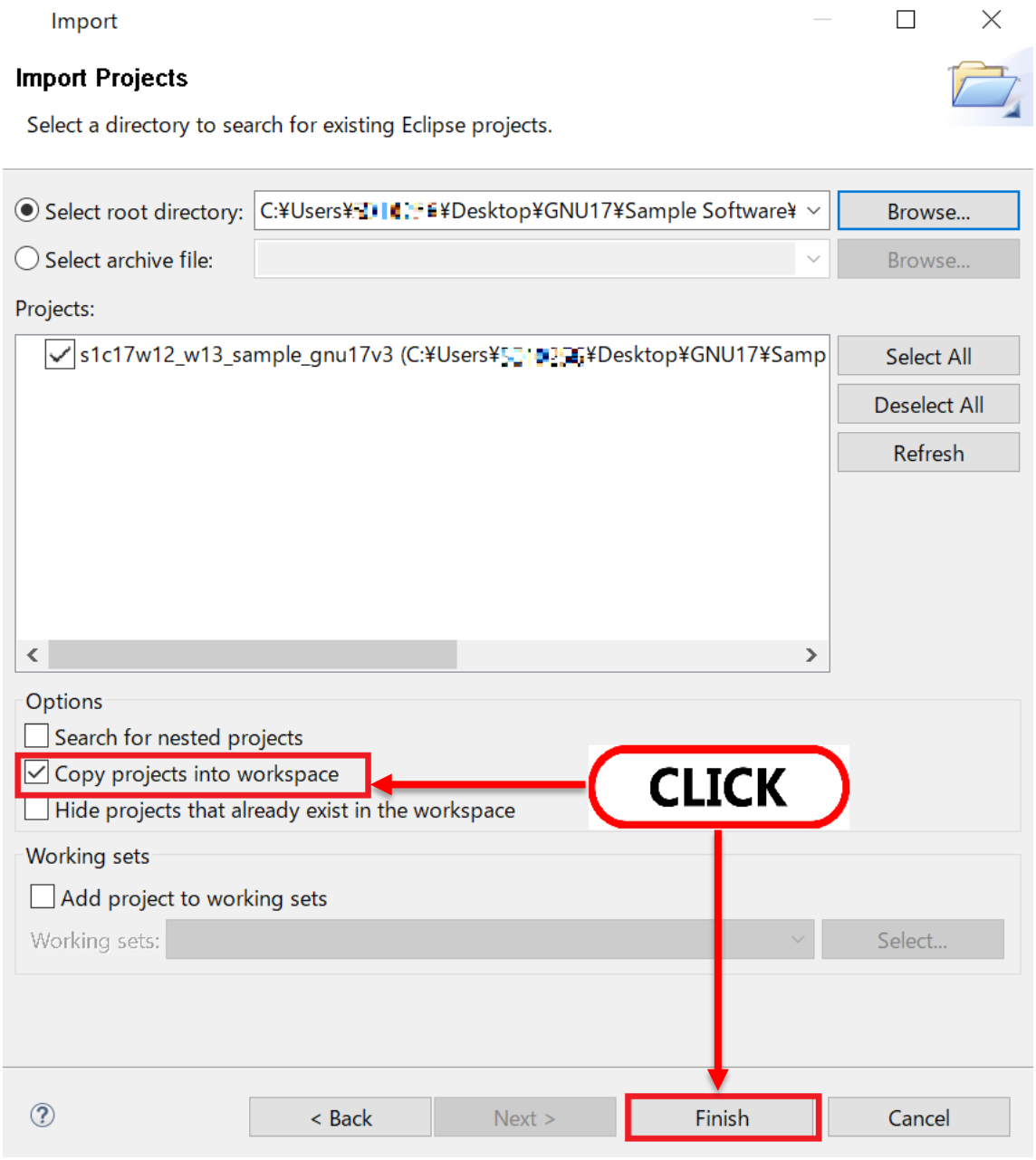
5.13 Please select [Existing Projects into Workspace] under [General], and click [Next>].



5.14 To select root directory, please click on [Browse…], and select a sample project for GNU17V3 from the folder which is checked on step 5.8.

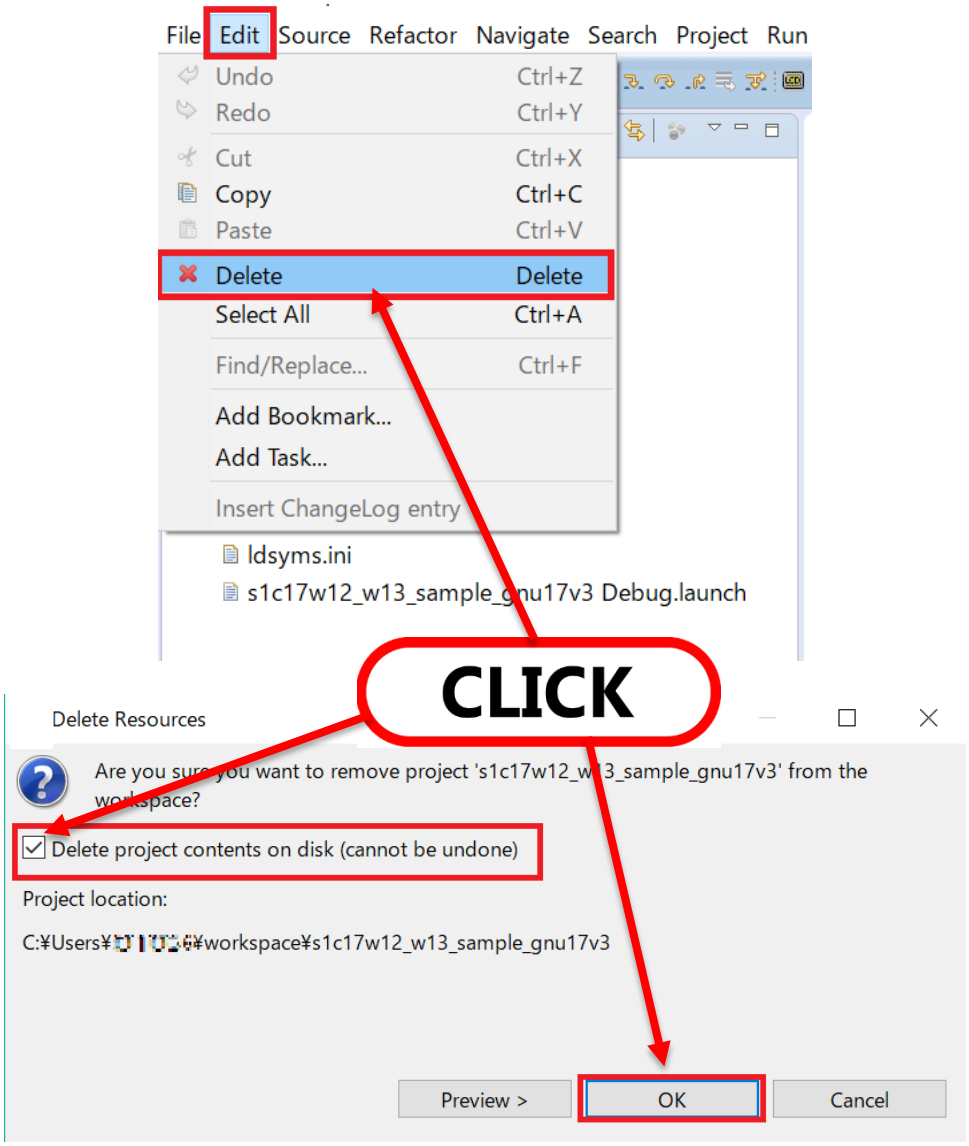


5.15 Please check the [Copy projects into workspace] check box, and click on [Finish]. This is the end of importing sample projects.



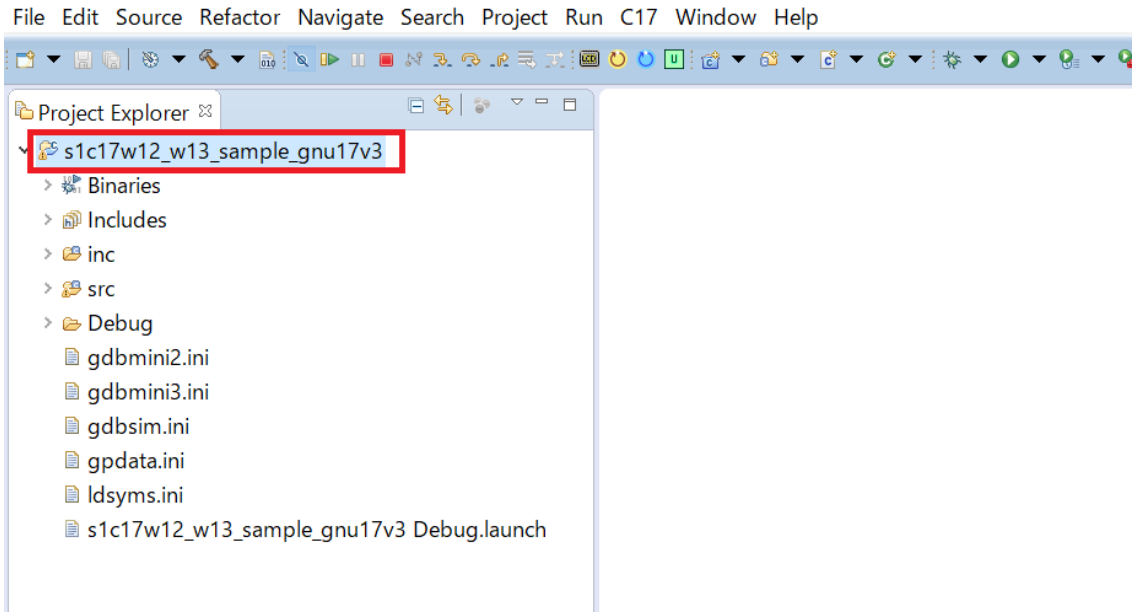
5.16 Note: How to Delete the Imported Sample Projects

Please click on [Delete] under [Edit] tab which is located on the upper left corner. After [Delete Resources] window shows up, please check the [Delete project contain on disk (cannot be undone)] check box. If it is deleted without checked, please delete the file under workspace which is chosen at 5.10.

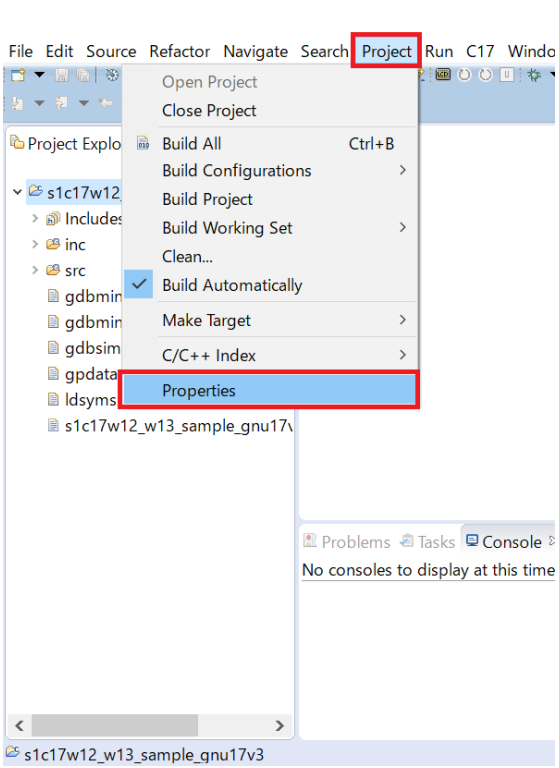


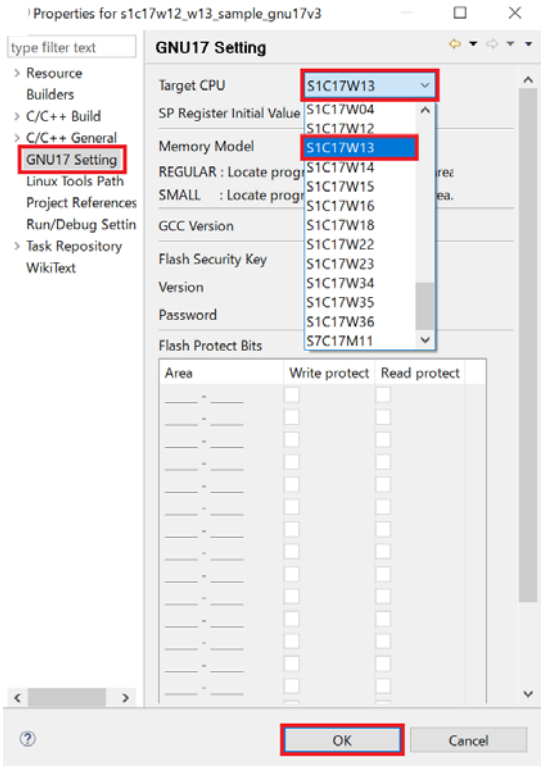
6. Building Projects

6.1 Please check if there is the sample project file on a Project Explorer window, and open it with a Double-Click.

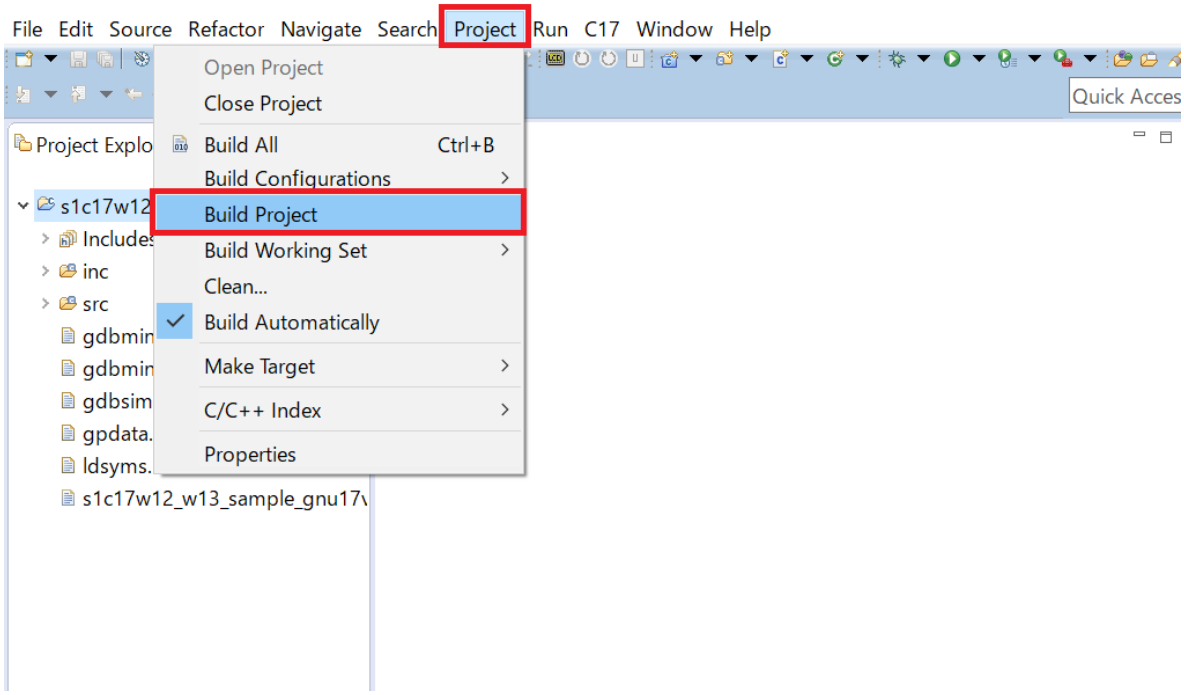


6.2 Please open in the order of [Project] > [Properties] > [GNU17 Setting], and check if Target CPU is selected correctly. (Target CPU is related to the evaluation board.)

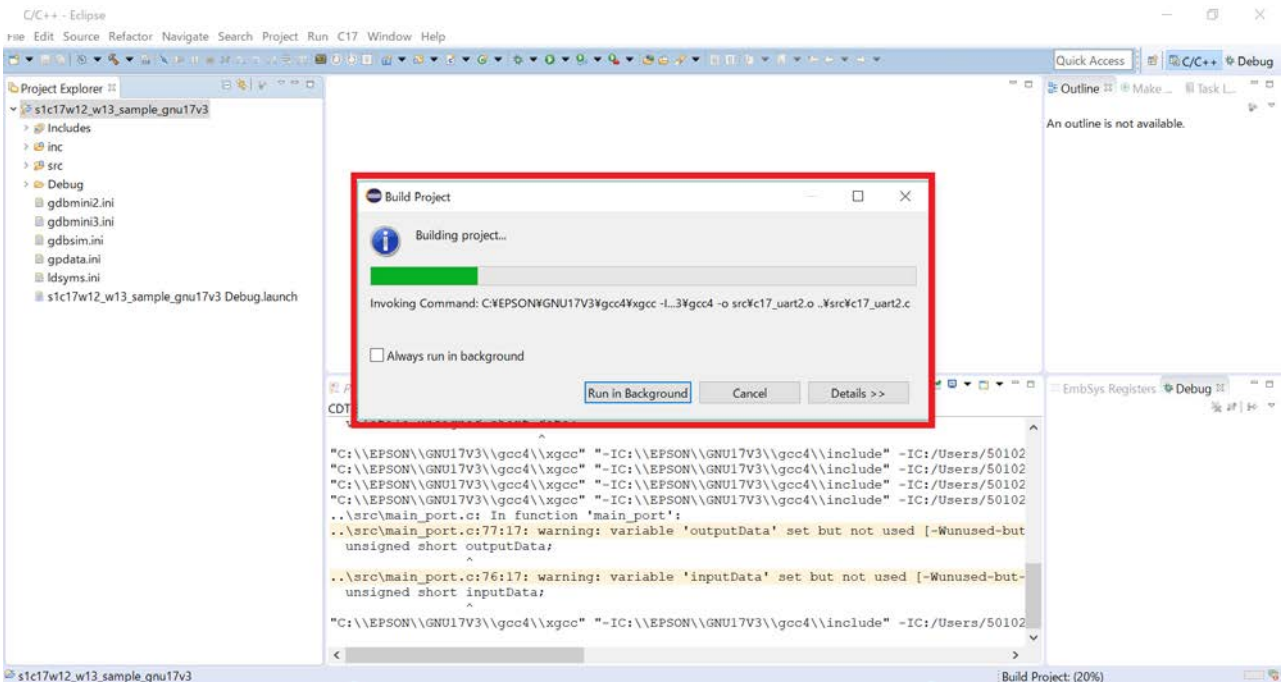




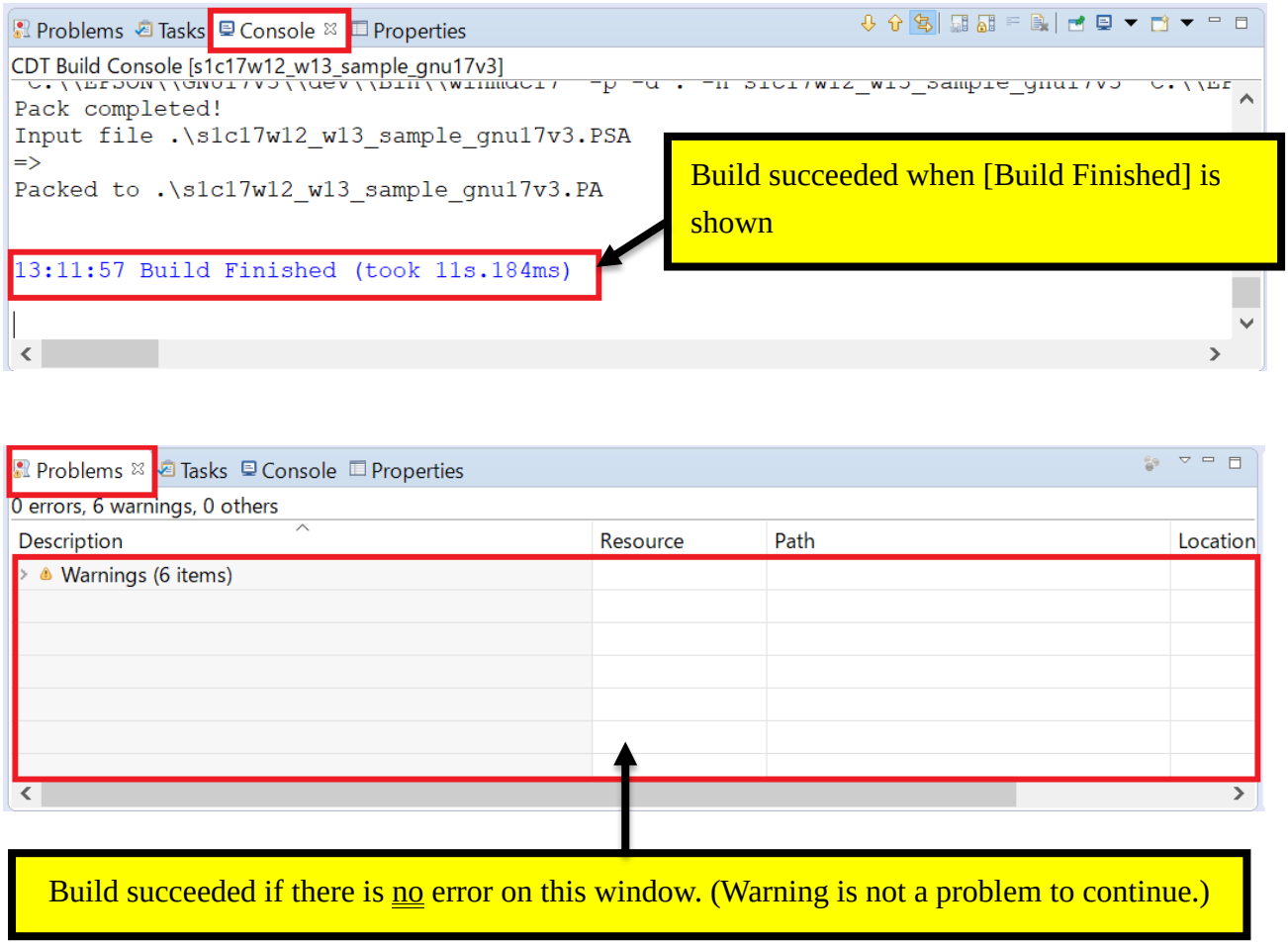
6.3 Please click on [Build Project] under [Project].



6.4 Building project is being started.



6.5 Please open the [Console] tab which is located on under the middle window, and see [Build Finished] message. In addition, please open [Problems] tab and check if there is no error.

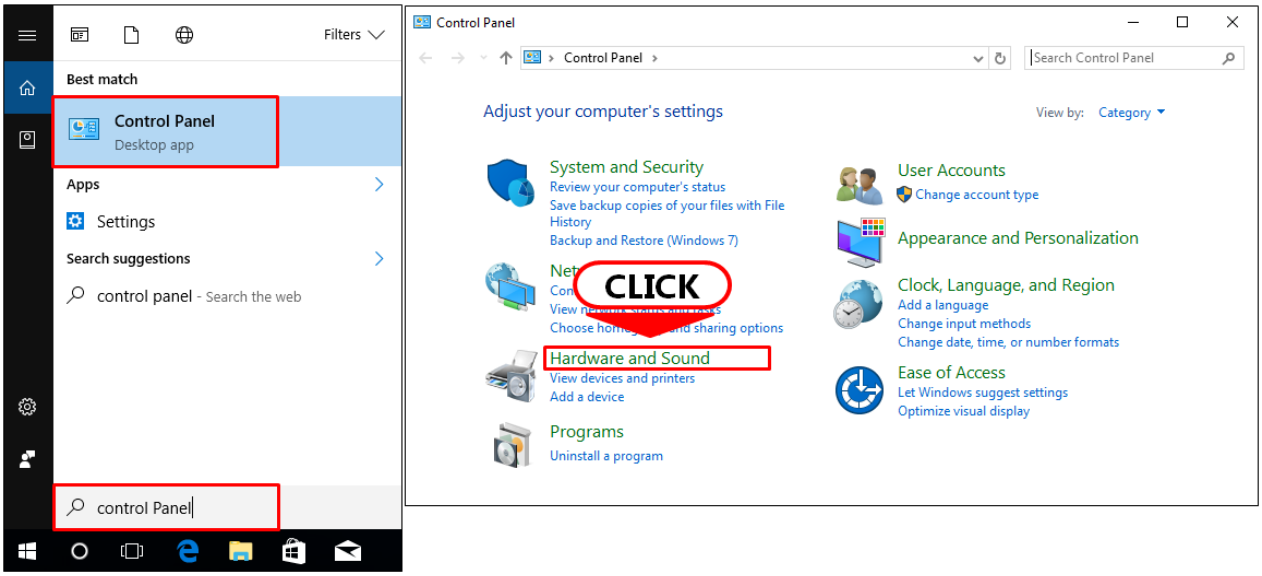


7. Connecting the Emulator, and the Evaluation Board.

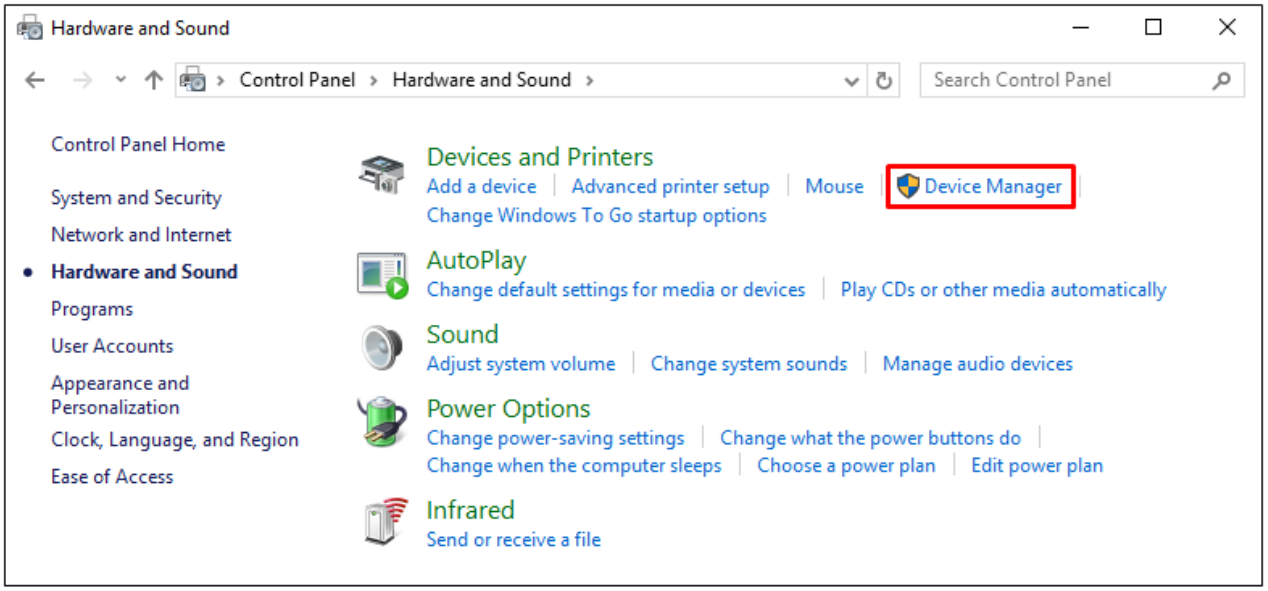
7.1 In the case of ICDminiV3

7.1.1 Moving on to install an USB driver for ICDminiV3 on the PC. Please connect only ICDminiV3 with PC, and check if green LED turns on. (It turns on after it blinks a couple of times.)

7.1.2 Please open [Control Panel] under Windows Menu, and click on [Hardware and Sound].

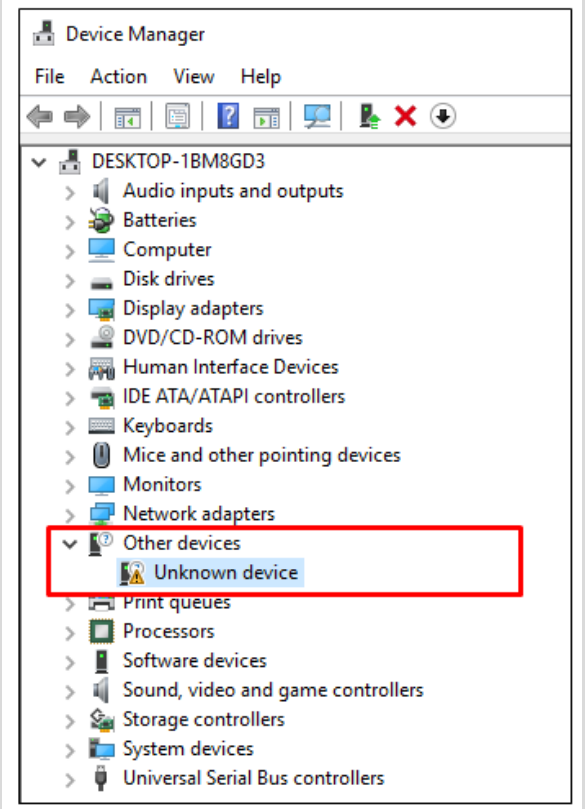


7.1.3 Please click on [Device Manager].

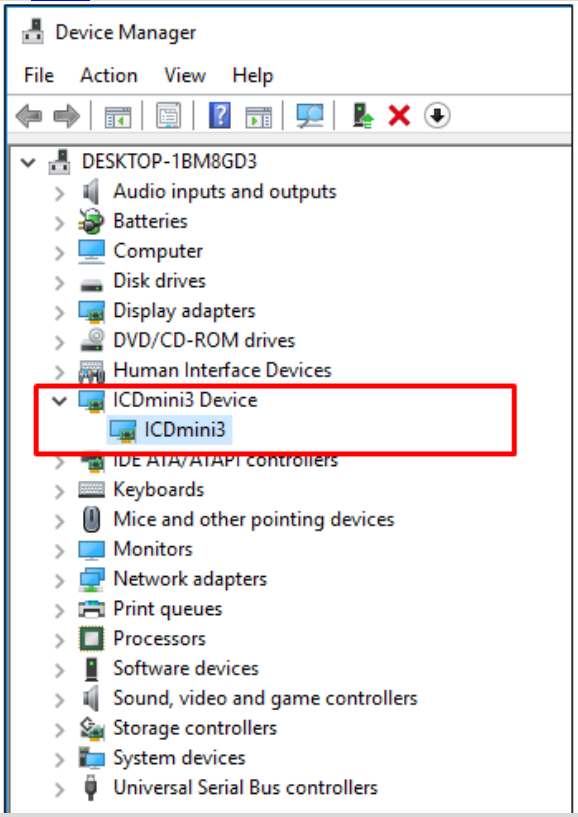


7.1.4 Please check if USB Driver for ICDminiV3 is installed.

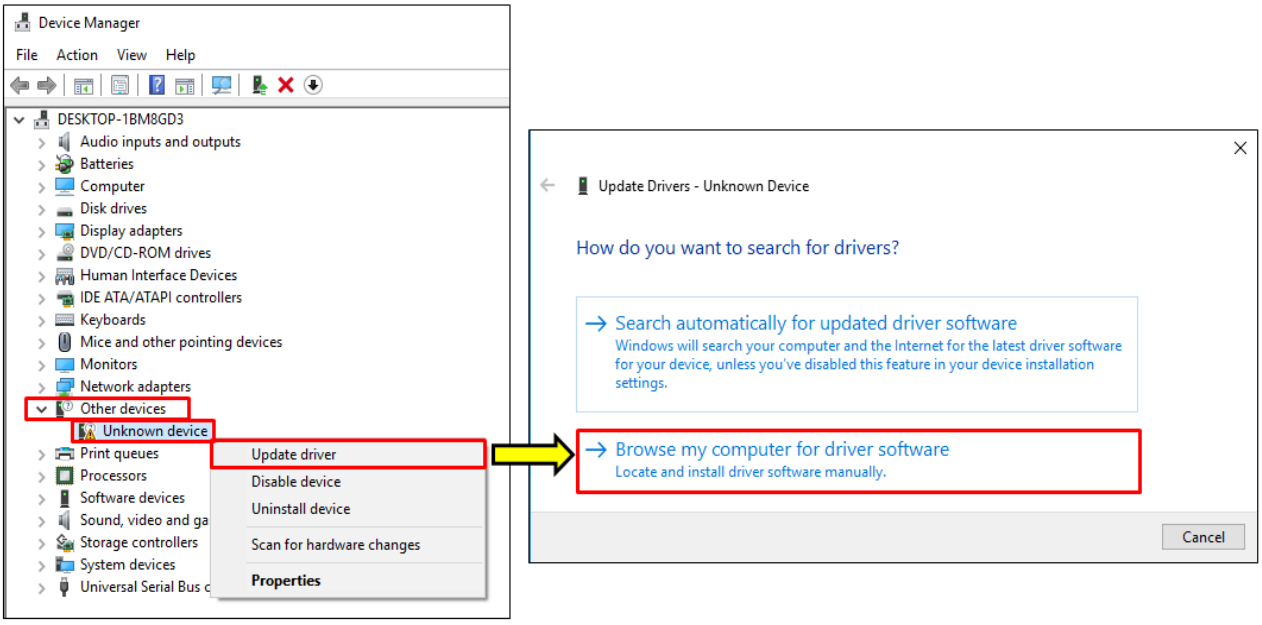
If it is not installed, it is shown as [Other devices] > [Unknown device]. Installation is necessary. Please go on to the next step.



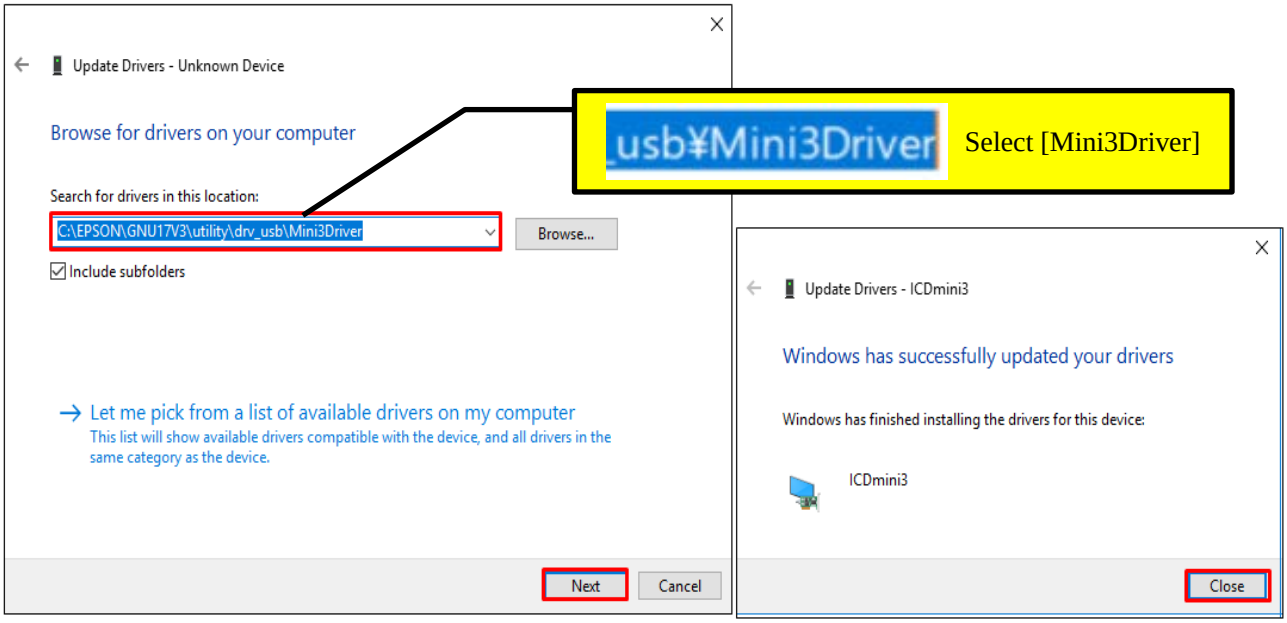
If it is installed, it is shown as [ICDmini3 Device] > [ICDmini3]. Please skip to 7.1.7.



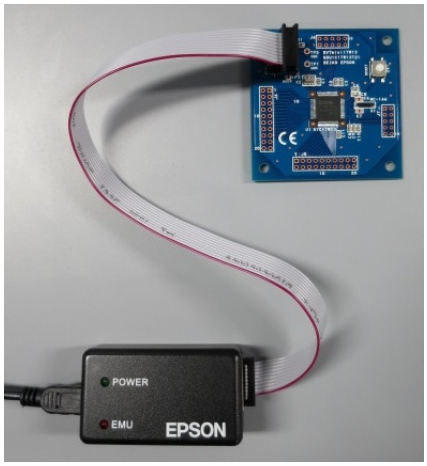
7.1.5 Please Right-Click on [Unknown devices], and renew the driver. “How do you want to search for drivers?” choose [Browse my computer for driver software]

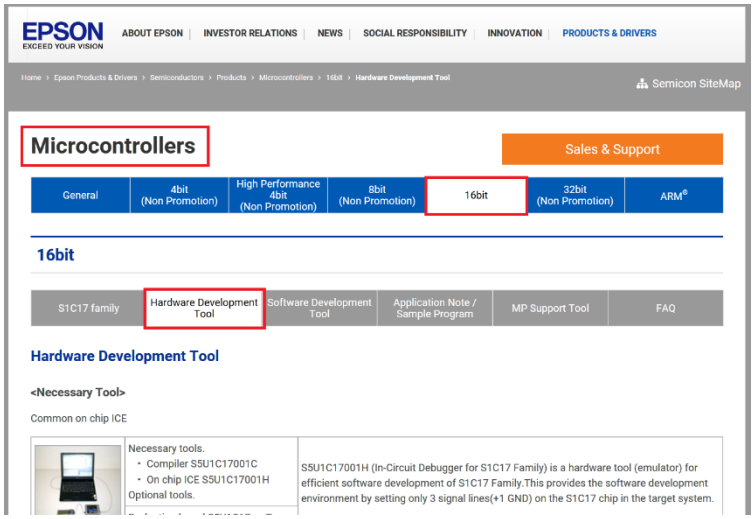


7.1.6 From Browse, please choose [C:] > [EPSON] > [GNU17V3] > [utility] > [drv_usb] > [Mini3Driver]. The installation of ICDminiV3 is completed. Please disconnect the USB.



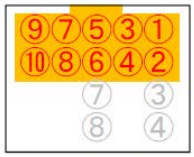
7.1.7 Please connect the emulator with the evaluation board. (In this setup guide, SVTmini17W13 is used. For the other evaluation boards connection, please refer to [EPSON HP] > [Semiconductors] > [Microcontroller] > [16bit] > [Hardware Development Tool] on the internet.)



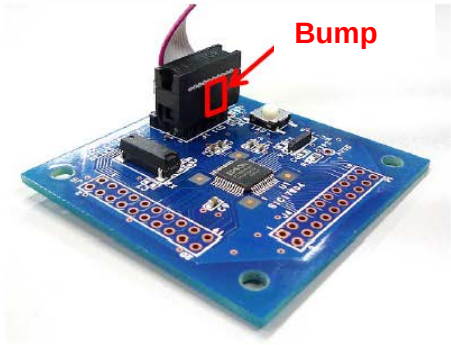


How to connect

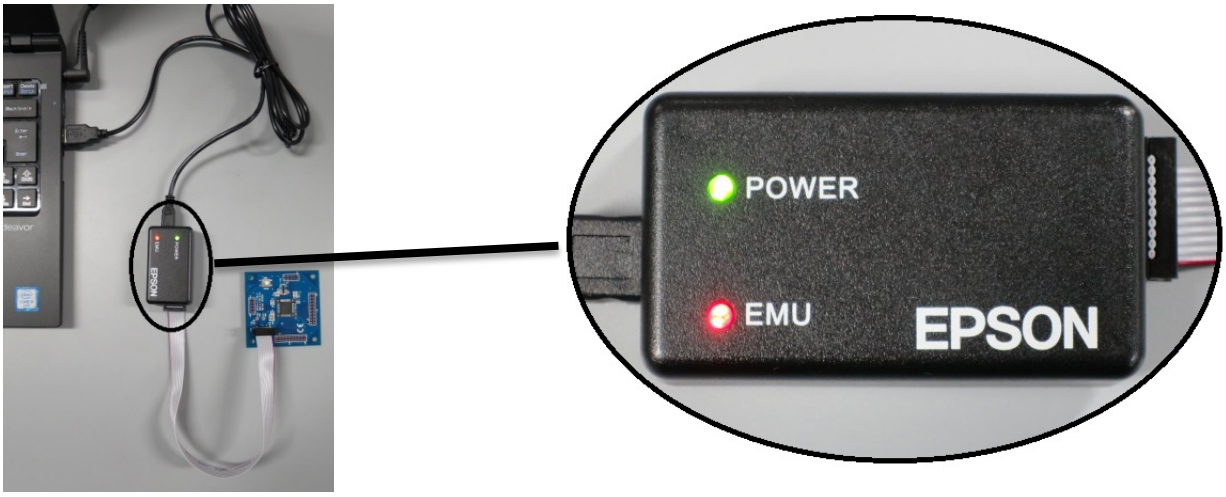
ICDmini Ver.3



Orange terminations are only used for ICDminiV3

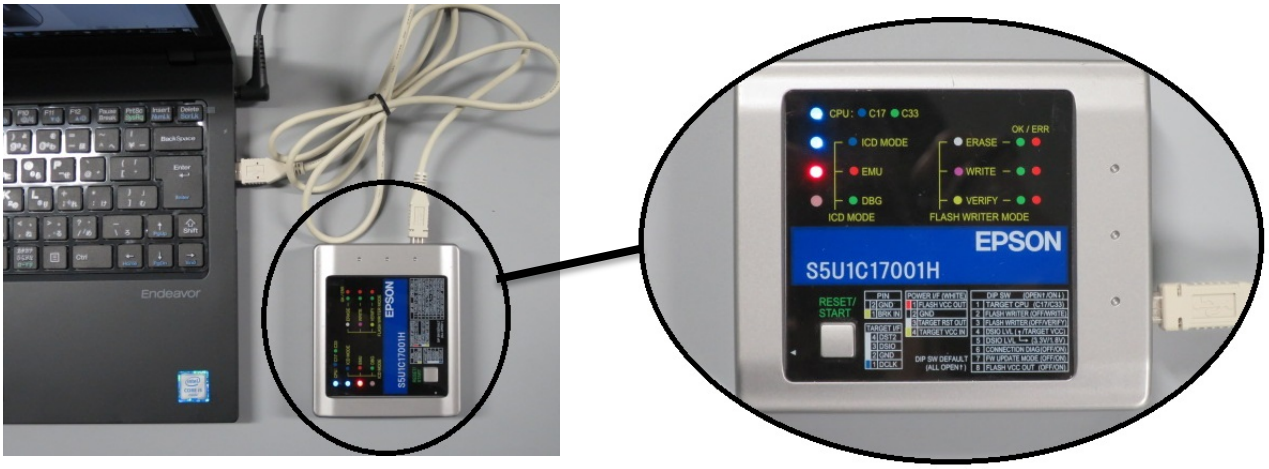


7.1.8 Please connect the emulator and the evaluation board with the PC. Check if both green and red LEDs are on. If those do not turn on, please check the connection.

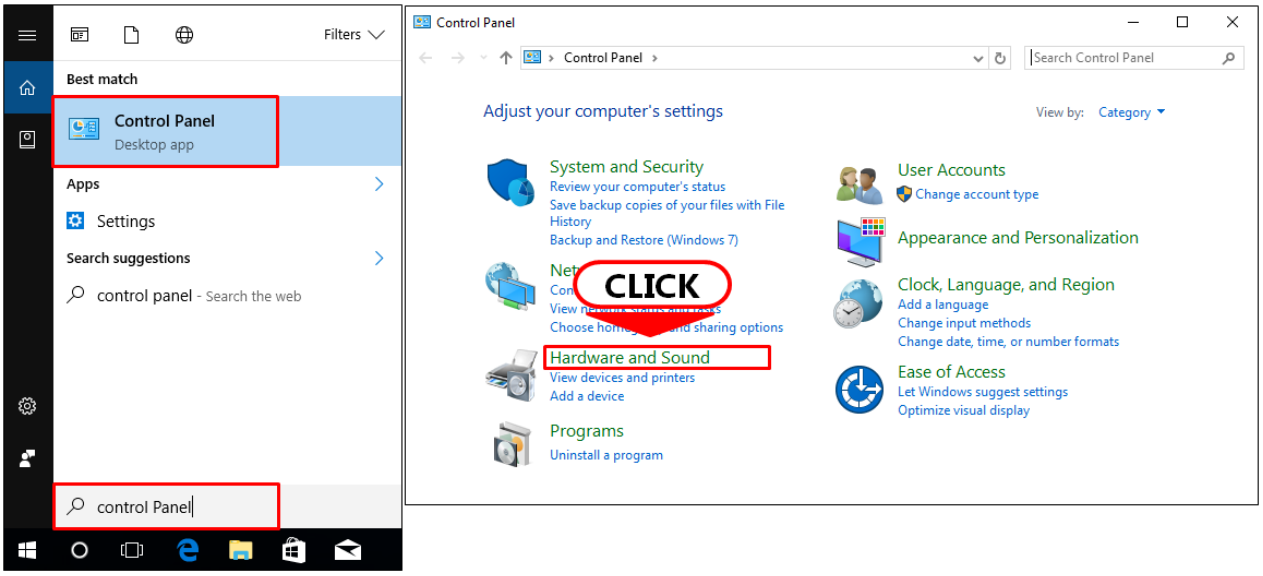


7.2 In the case of ICDminiV2

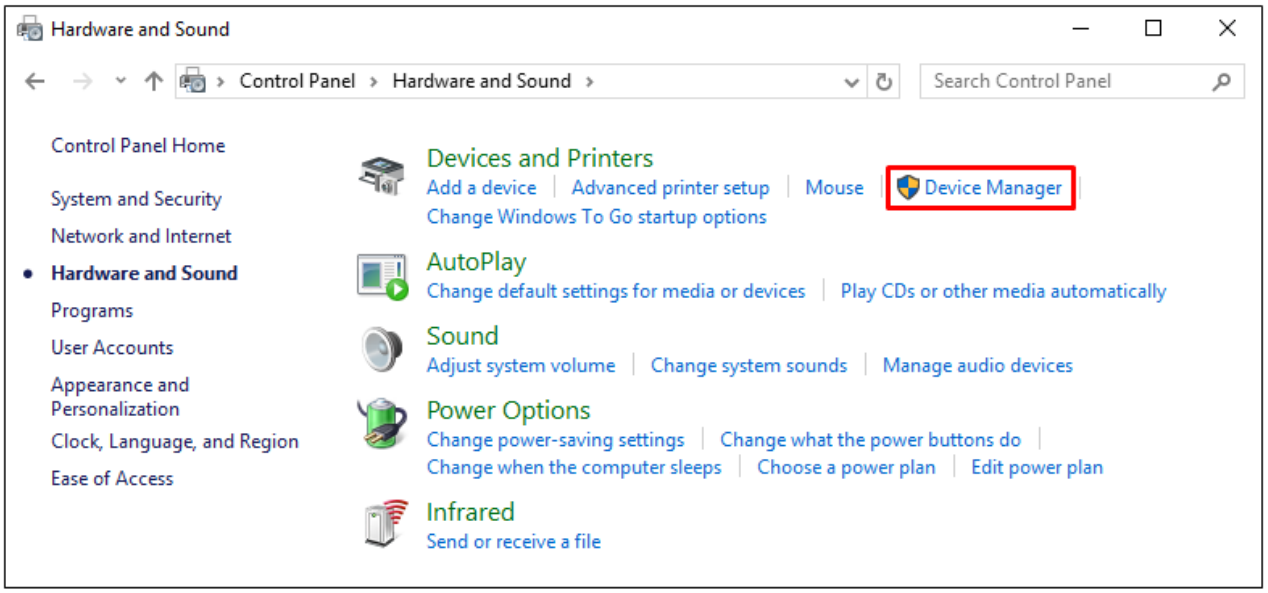
7.2.1 Moving on to install an USB driver for ICDminiV2 on the PC. Please turn off the all DIP switches, and connect it with PC. Please check if LED is on in the order of Blue, Blue, and Red. (If Blue, Blue, Red, and Green LEDs turn on, installation has already done. Please skip to 7.2.7.)



7.2.2 Please open [Control Panel] under Windows Menu, and click on [Hardware and Sound].

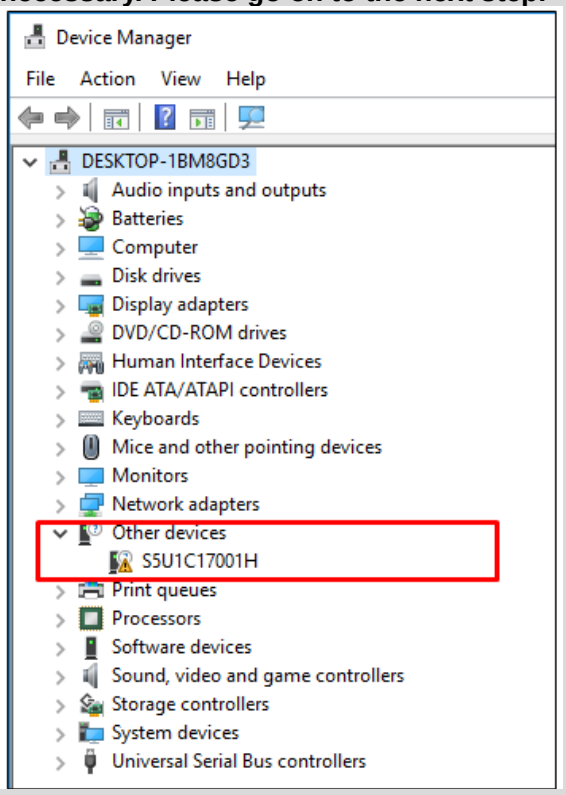


7.2.3 Please click on [Device Manager].

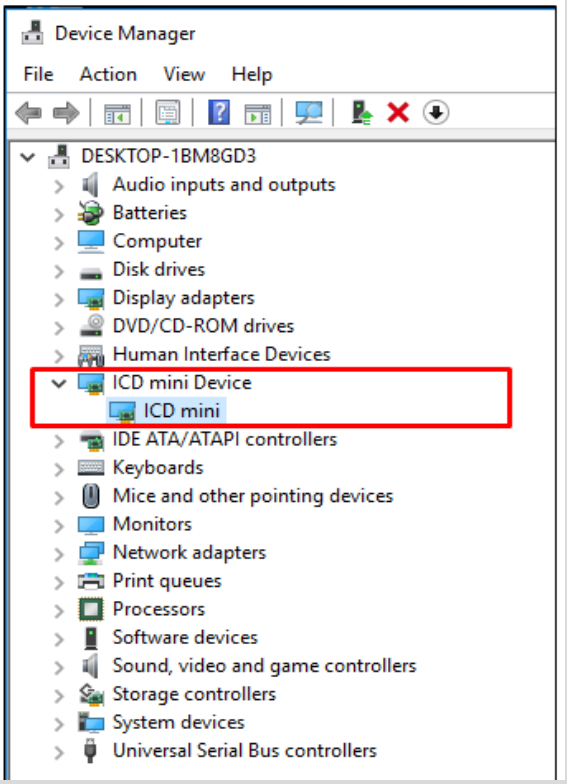


7.2.4 Please check if USB Driver for ICDminiV2 is installed.

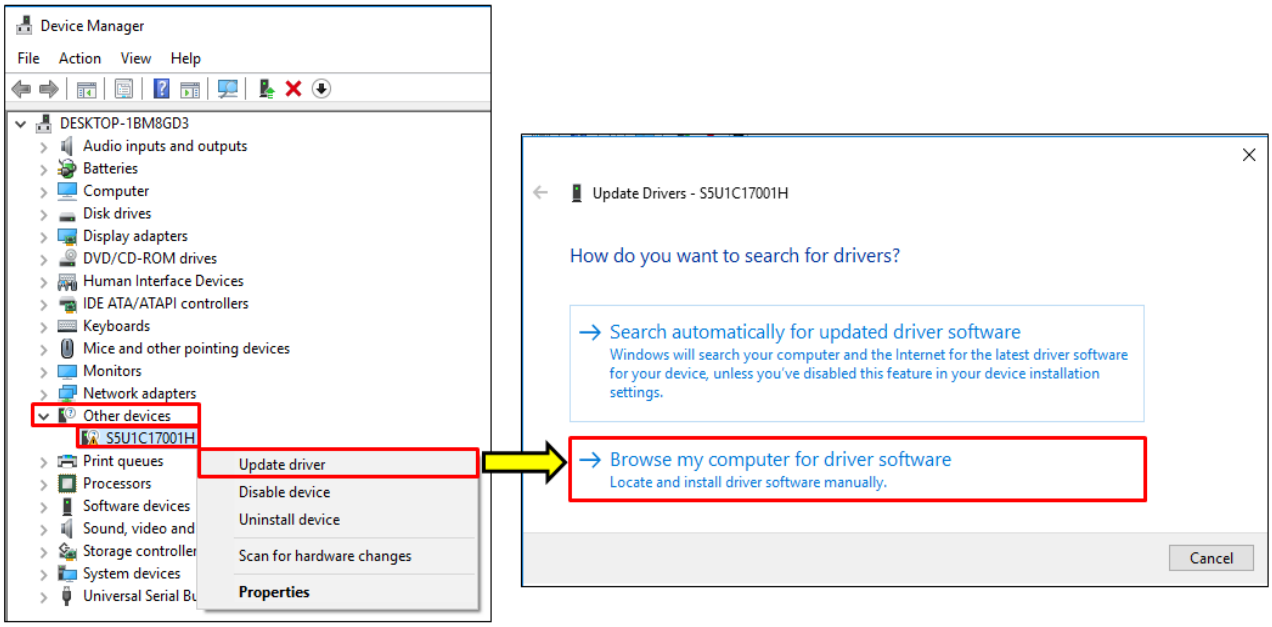
If it is not installed, it is shown as [Other devices] > [S5U1C170001H]. Installation is necessary. Please go on to the next step.



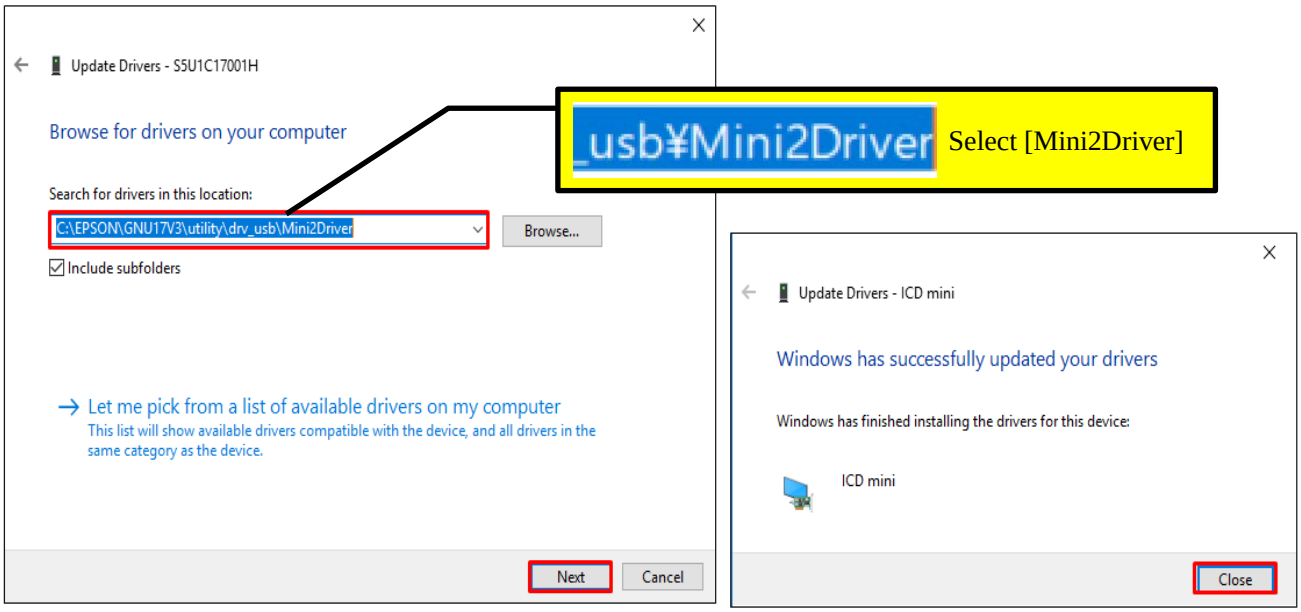
If it is installed, it is shown as [ICD mini Device] > [ICD mini]. Please skip to 7.2.7.



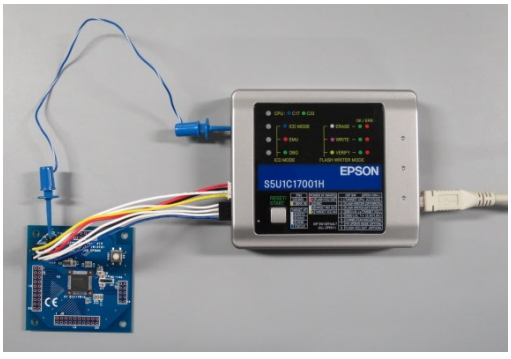
7.2.5 Please Right-Click the [S5U1C17001H], and renew the driver. “How do you want to search for drivers?” choose [Browse my computer for driver software].

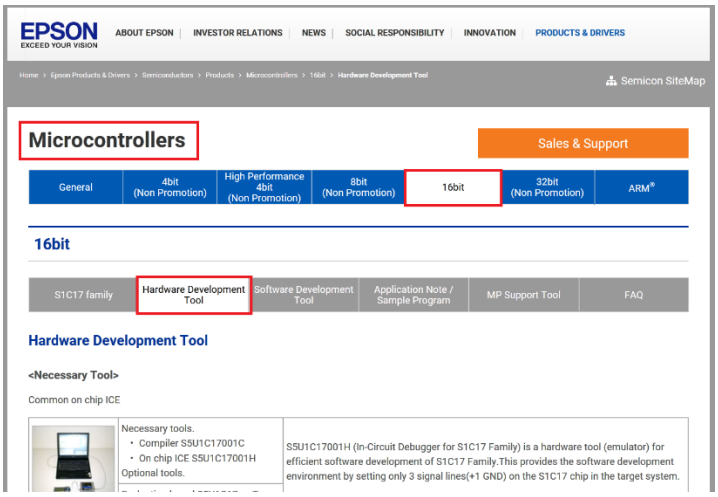


7.2.6 From Browse, choose [C:] > [EPSON] > [GNU17V3] > [utility] > [drv_usb] > [Mini3Driver]. The installation of ICDminiV2 is completed. Please disconnect the USB.

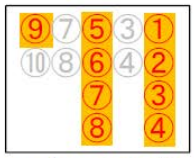


7.2.7 Please connect the emulator with the evaluation board. (In this setup guide, SVTmini17W13 is used. For the other evaluation boards connection, please refer to [EPSON HP] > [Semiconductors] > [Microcontroller] > [16bit] > [Hardware Development Tool] on the internet.)

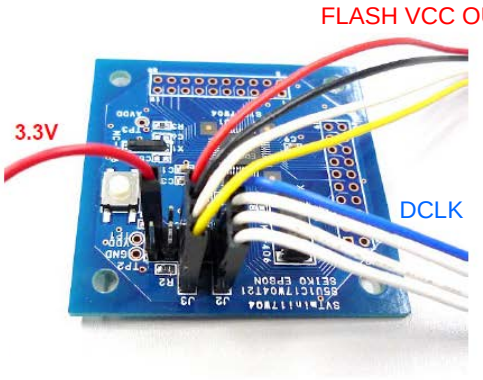


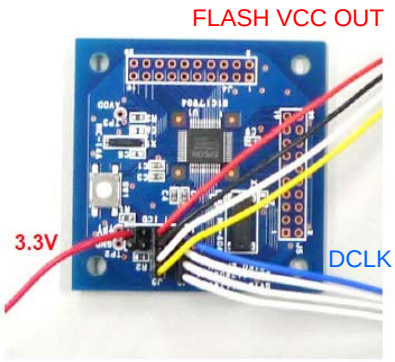


How to connect
ICDmini Ver.2

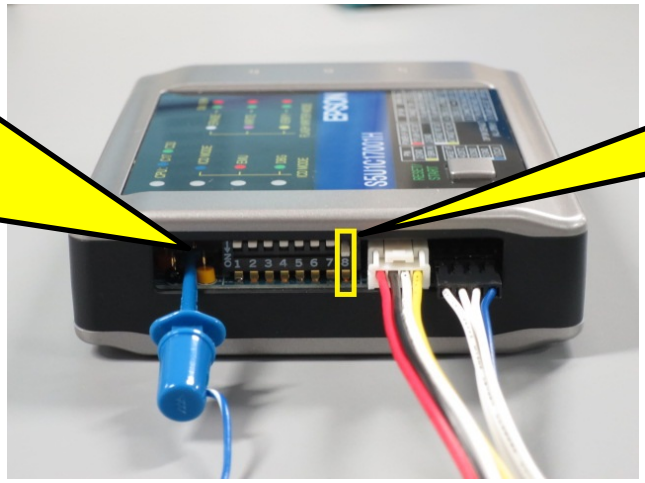


Orange terminations are only used for ICDminiV2



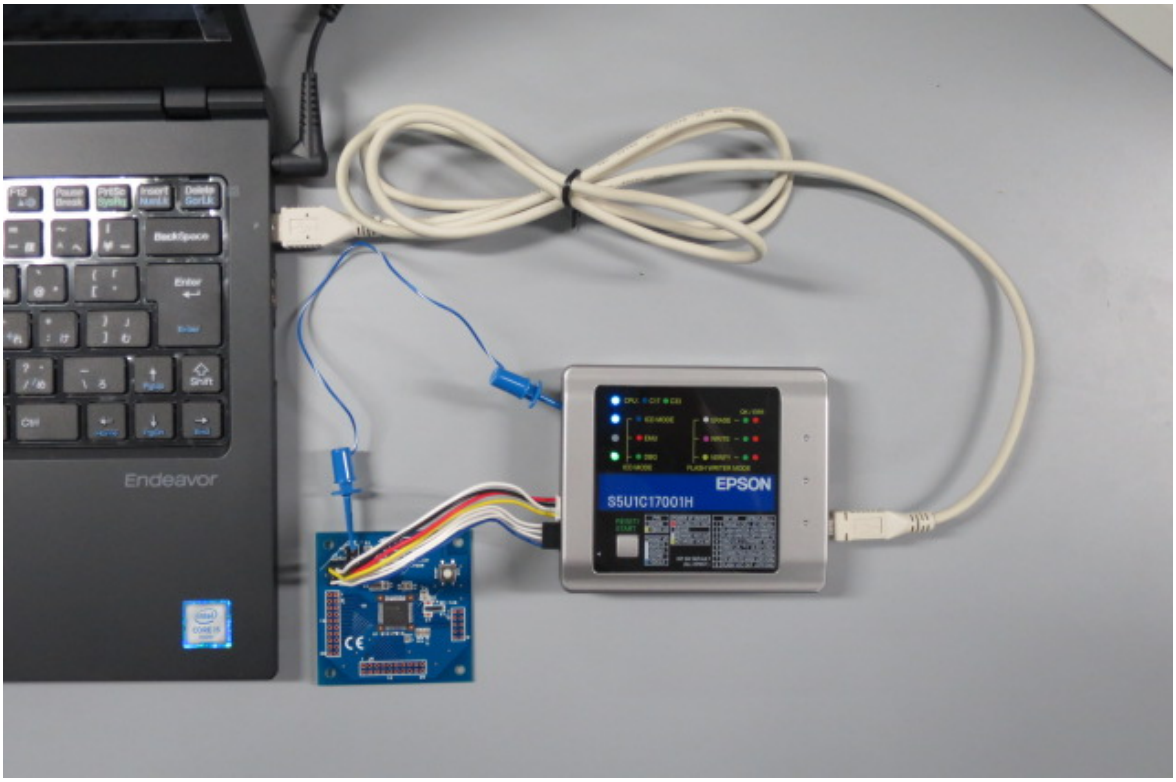


Please get power supply from emulator or stabilized power source for the evaluation board. (The red 3 Volt terminal in the back-right corner is used in this case.)



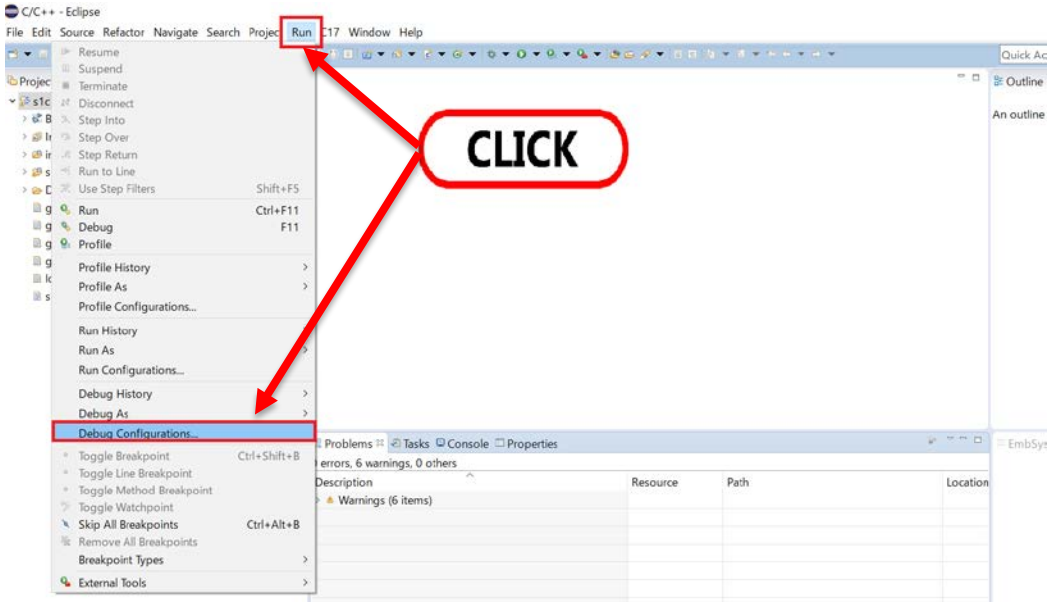
Please turn on DIPSW8 of ICDminiV2

7.2.8 Connecting the emulator and the evaluation board with the PC. LED is supposed to light in the order of (BL)(BL)(Off)(GN).



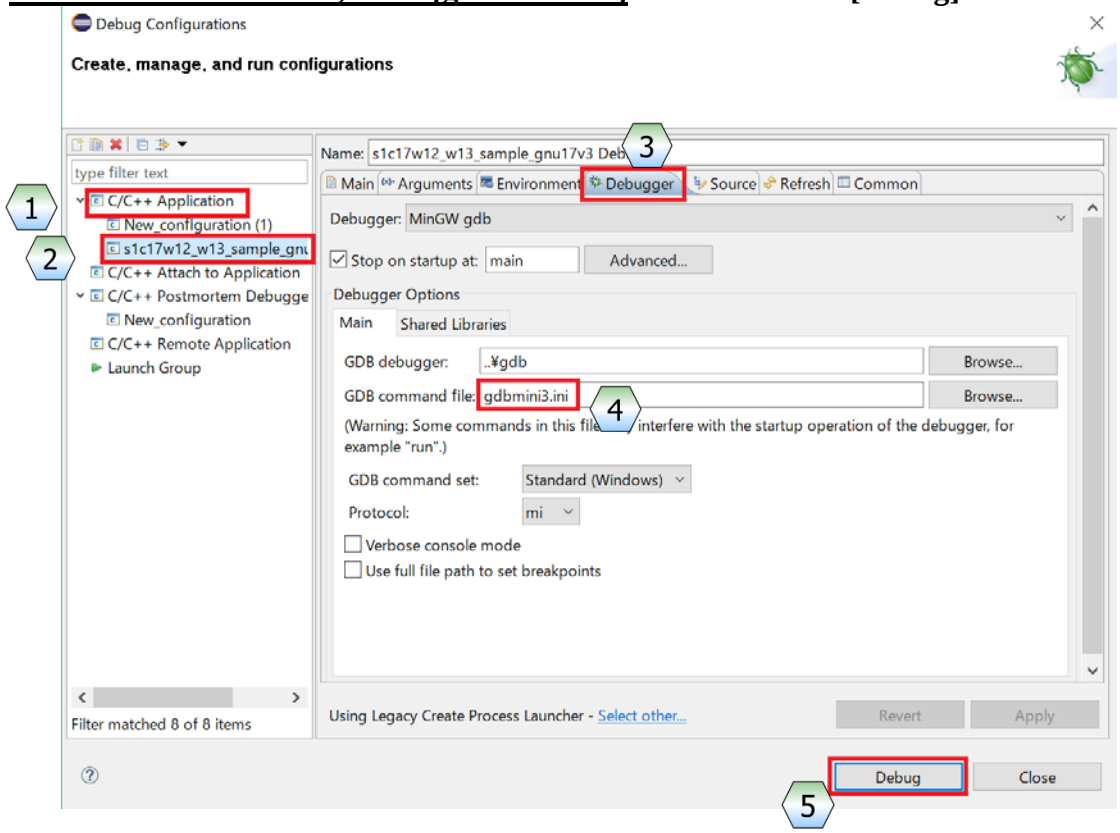
8. Executing the Program

8.1 Please select [Run] > [Debug Configurations]

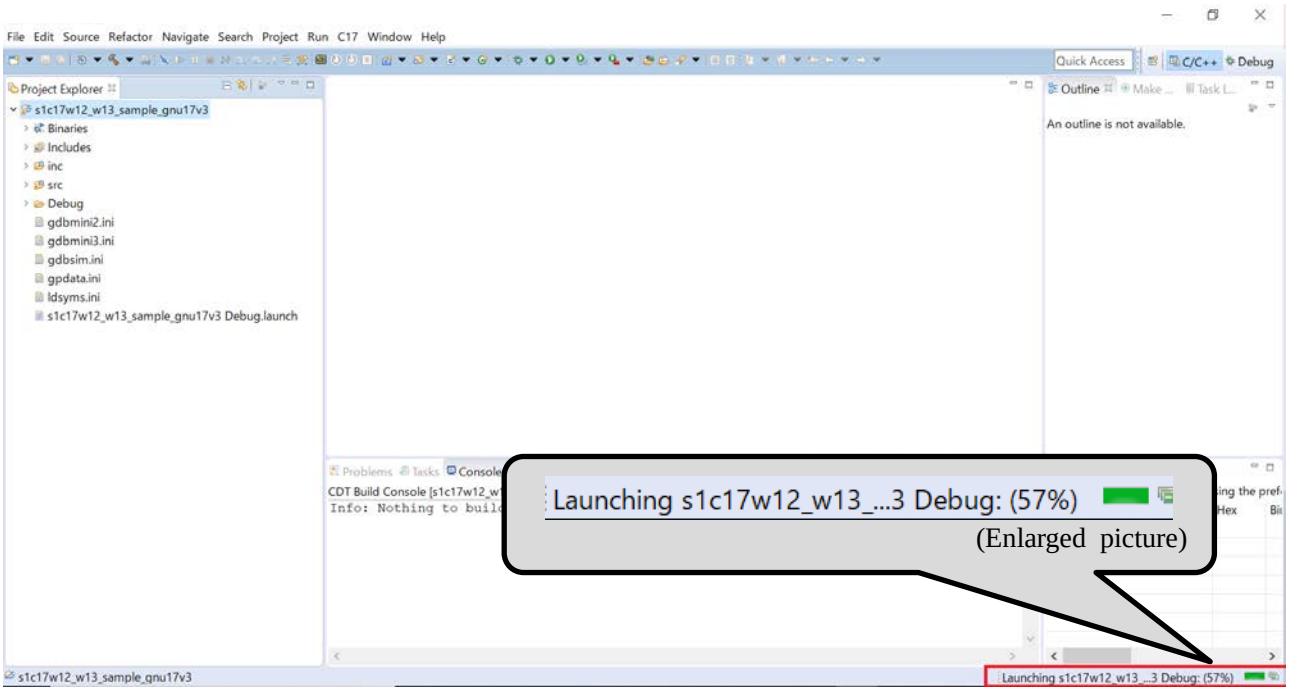


8.2 Under [C/C++ Application], please choose the sample project that is supposed to execute. Please click on [Debugger] tab, and edit the [GDB command file].

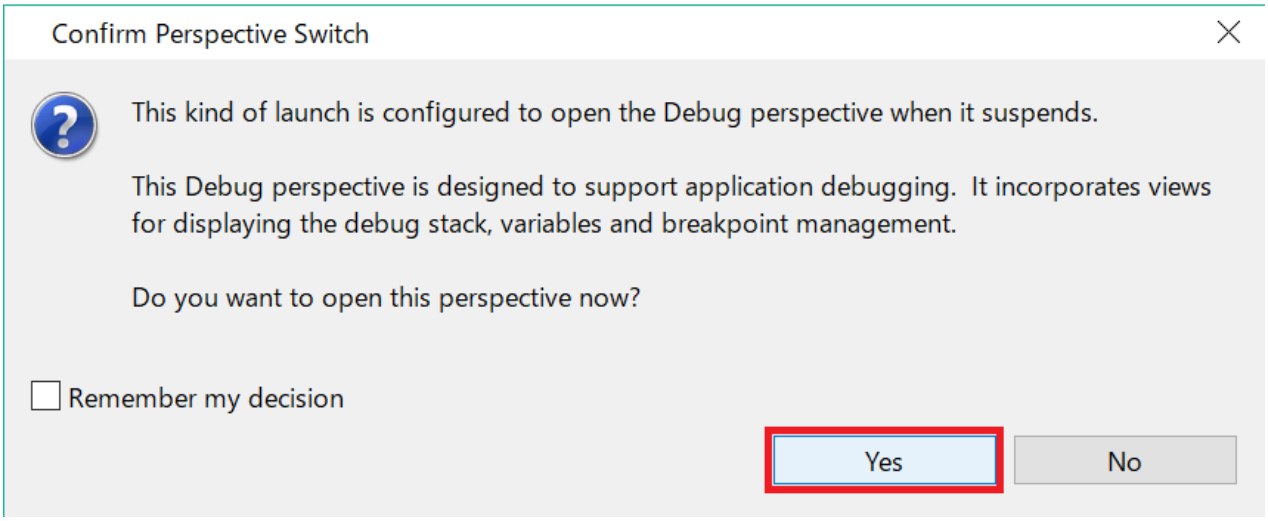
<u>If ICDmini Ver.3 is used, enter [gdbmini3.ini]</u>.
<u>If ICDmini Ver.2 is used, enter [gdbmini2.ini]</u>. Please click on [Debug] then.



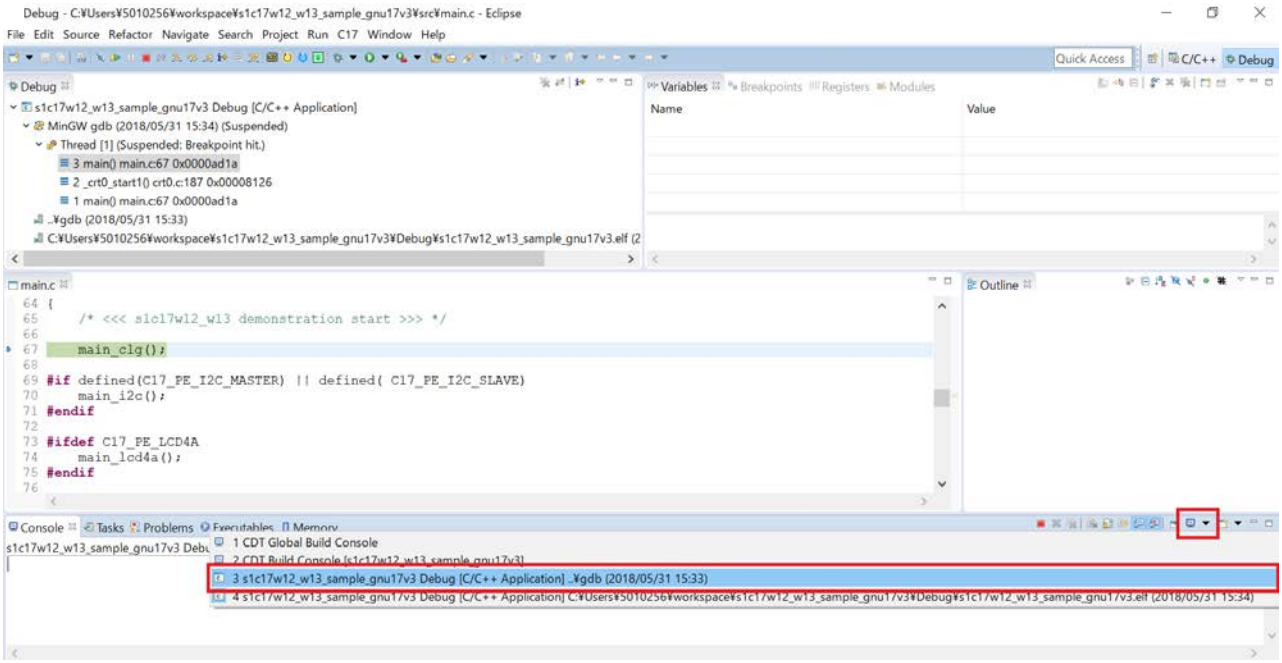
8.3 Debugging is started, and progress bar is shown at the right bottom corner.



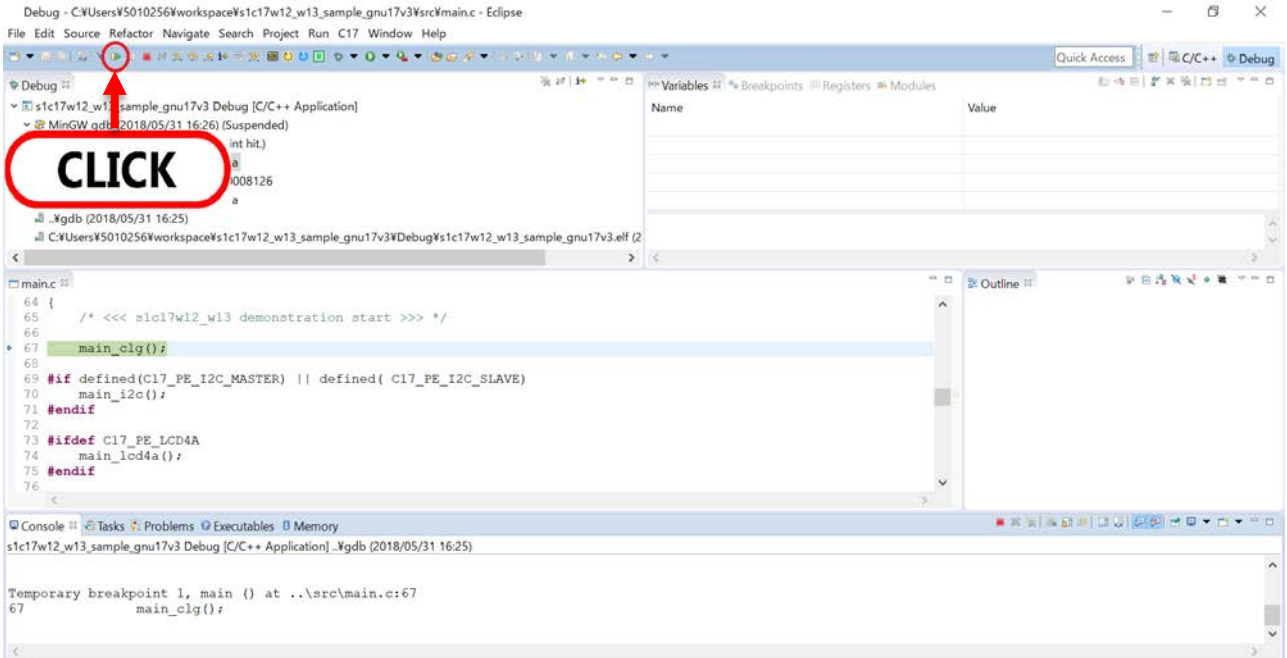
8.4 After a short time, [Confirm Perspective Switch] window appears. Please click on [Yes].



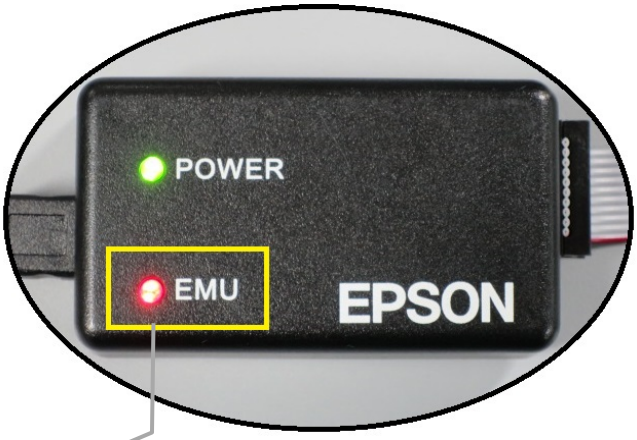
8.5 Window is shifted Debug window. Please click on [Display Selected Console] pulldown, and select an option that end with […¥gdb]. Please check if any errors do not appear.



8.6 Please click on [Resume].



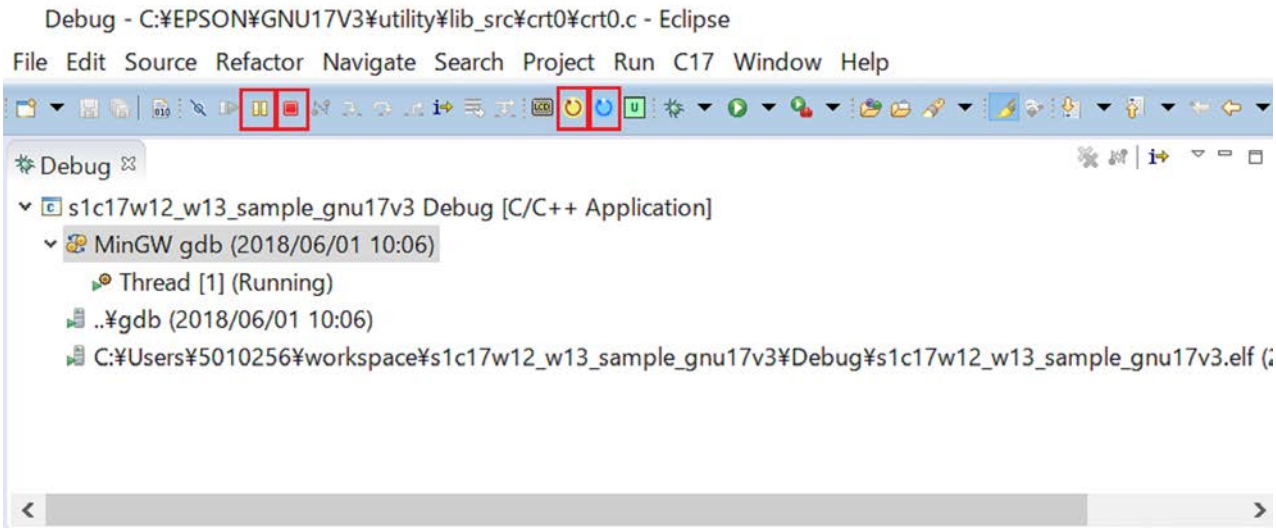
8.7 Sample project is executed.



Blinking EMU = Executing
(ICDminiV3)

(BL)(BL)(RD) ON = Executing
(ICDminiV2)

8.8 Please click on [ ] to suspend the program, and click on [ ] to terminate the program. Please click on [ ] to reset the program, and click on [ ] to reset the program and the target.



Please refer to the following manuals for the other debug operations:

- S5U1C17001C Manual (downloaded together with GNU17V3)
- GNU17 Ver.3.1 Tutorial (from EPSON HP)

Revision History

Attachment-1

Rev. No.	Date	Page	Category	Contents
Rev 1.0	2016/1/14	All	new	New released.
Rev 1.1	2017/07/25	-	update	Updated for new EPSON Web site Supported for GNU17v3.1.1 Supported for sample software(G3)
Rev 1.2	2017/07/26	-	update	Added some pictures.
Rev 2.0	2018/07/18	All	update	Full updated for Windows10.

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