Build and Debug Environment Setup – IAR

This document illustrates how to build Realtek low power Wi-Fi software under IAR SDK environment.

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1. Introduction

This document illustrates how to build Realtek low power Wi-Fi software under IAR SDK environment.

2. How to get IAR

IAR provides an IDE environment for code building, downloading, and debugging. Please check “IAR Embedded Workbench” on http://www.iar.com/, and trail version is available. It requires IAR version ***greater than v7.20*** which supports CMSIS-DAP.

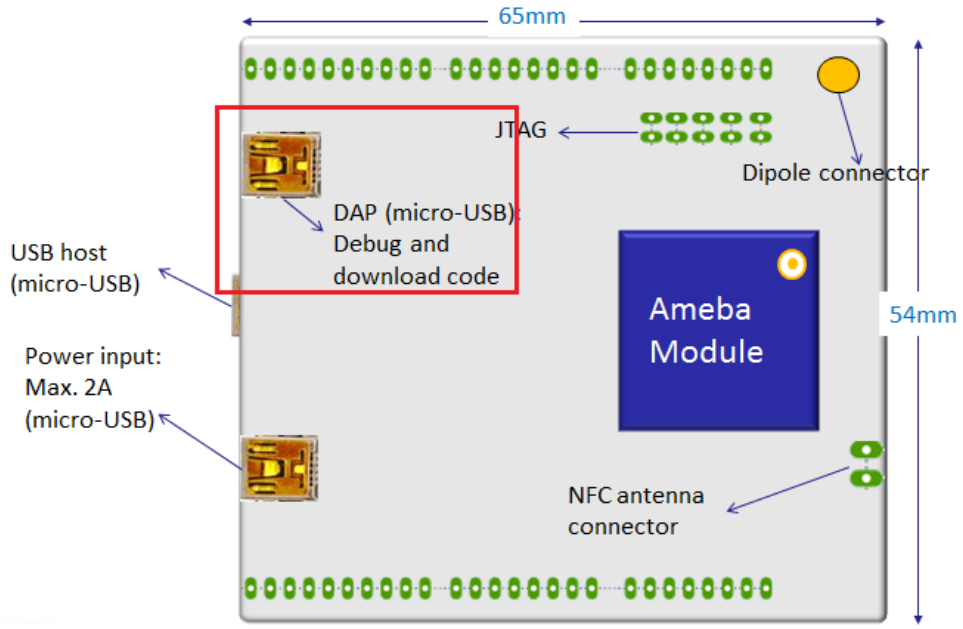
3. Debugger Setting

This board supports both CMSIS-DAP debugger and J-Link.

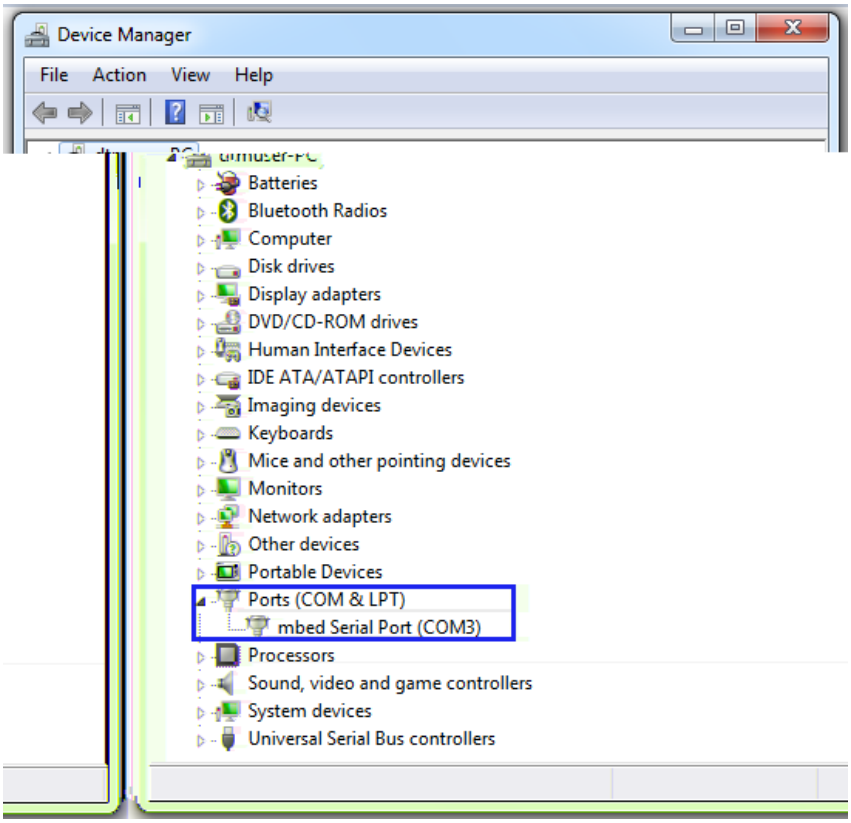
3.2 CMSIS-DAP

Ameba Device Board 2V0 supports CMSIS-DAP debugger. It requires installing “serial to USB driver” at first. Serial to USB driver can be found in tools\serial_to_usb\mbedWinSerial_16466.

Connect board to the PC with micro-USB cable.



After installation, connect the board to PC, and then there should be mbed Serial Port shown in Device Manager.

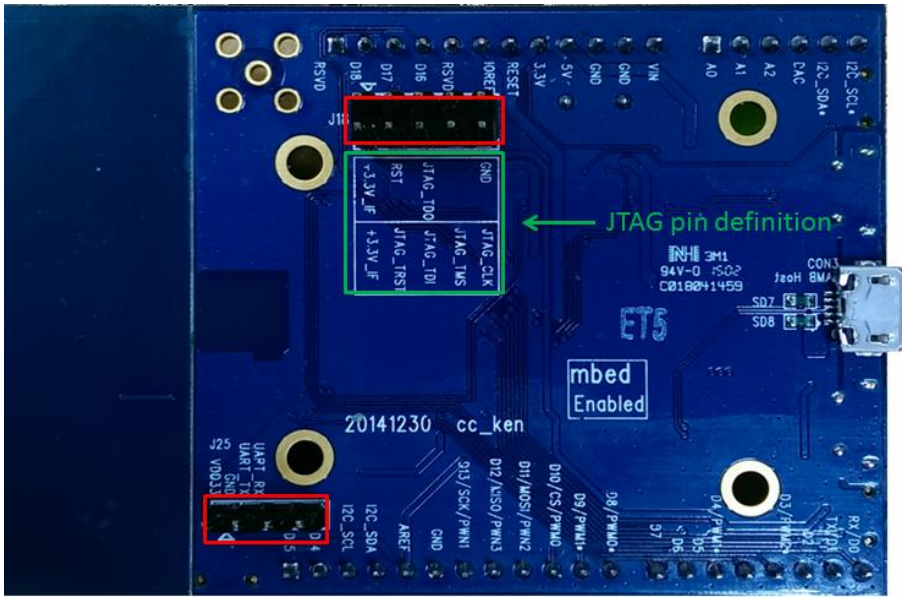


3.2 J-Link/JTAG

The board is configured as CMSIS-DAP mode. To use J-Link debugger, please follow the next procedures.

Hardware Configuration

Weld JTAG and log UART connectors to HDK board and connect with pitch 2.54mm 2x5pins connector. It is recommended to weld the connector on the bottom side.

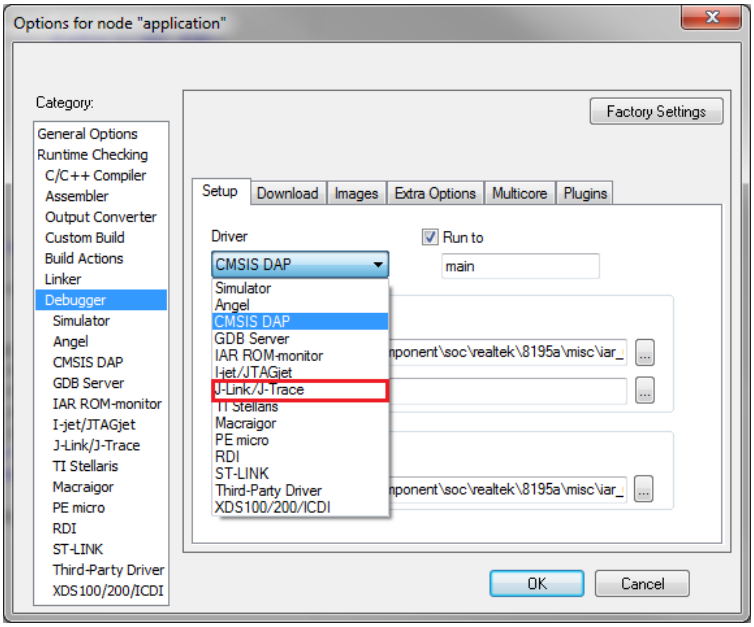


p.s. J-Link is supported on RTL-AMEBA_DEV_**3V0**

2.54mm 2x5pins connector (or use Dupont Line)

IAR Setting

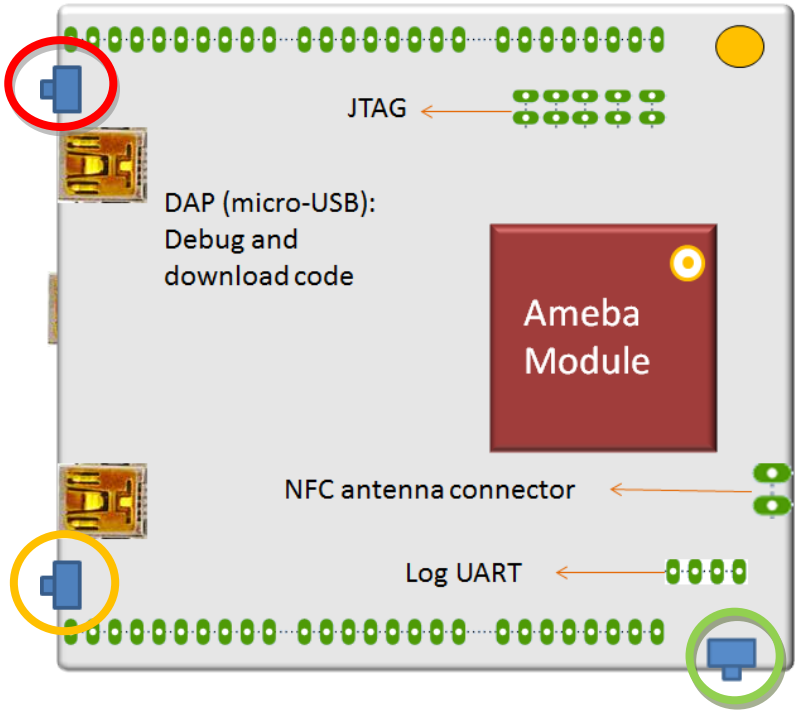
Change setting of IAR project from CMSIS-DAP to J-Link/J-Trace in Project Options Debugger Setup Driver, and Selecting OK to finish and enjoy JTAG debugging.



Power On

Please not that for some J-Link debugger, it may require disabling CMSIS-DAP.

There are two kinds of method to disable CMSIS-DAP function. One is holding button (red-circled) then plugging power to disable CMSIS-DAP function. Release the button after power on. The other is holding button (red-circled) and then press button (yellow-circled) to disable CMSIS-DAP function. If CMSIS-DAP function is disabled successfully, LEDs (D4 and D5) will not be shined.

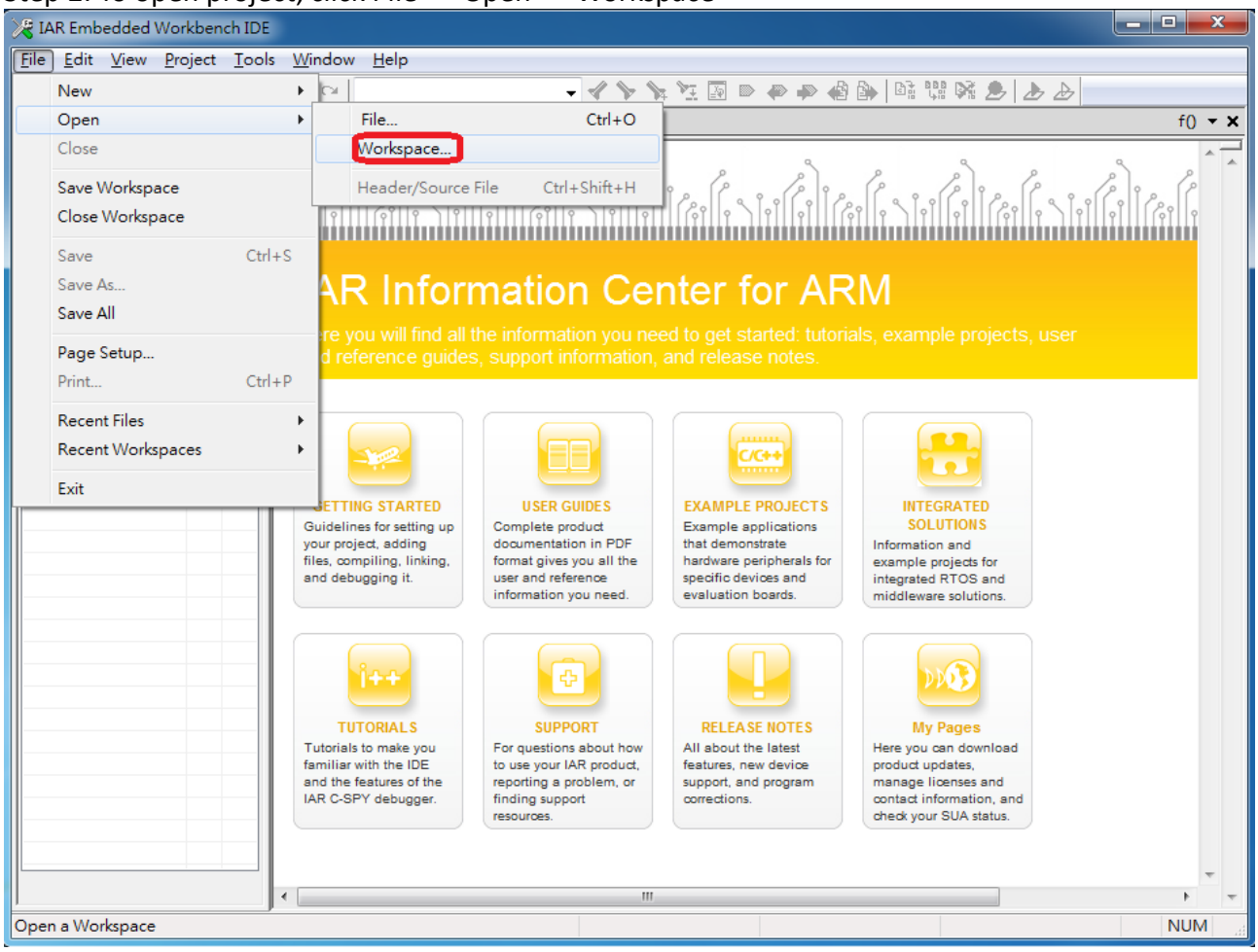


Note: To reset main chip, it is recommended to press Reset button (green-circled) instead of re-plugged in the power cable.

4. How to build and download code

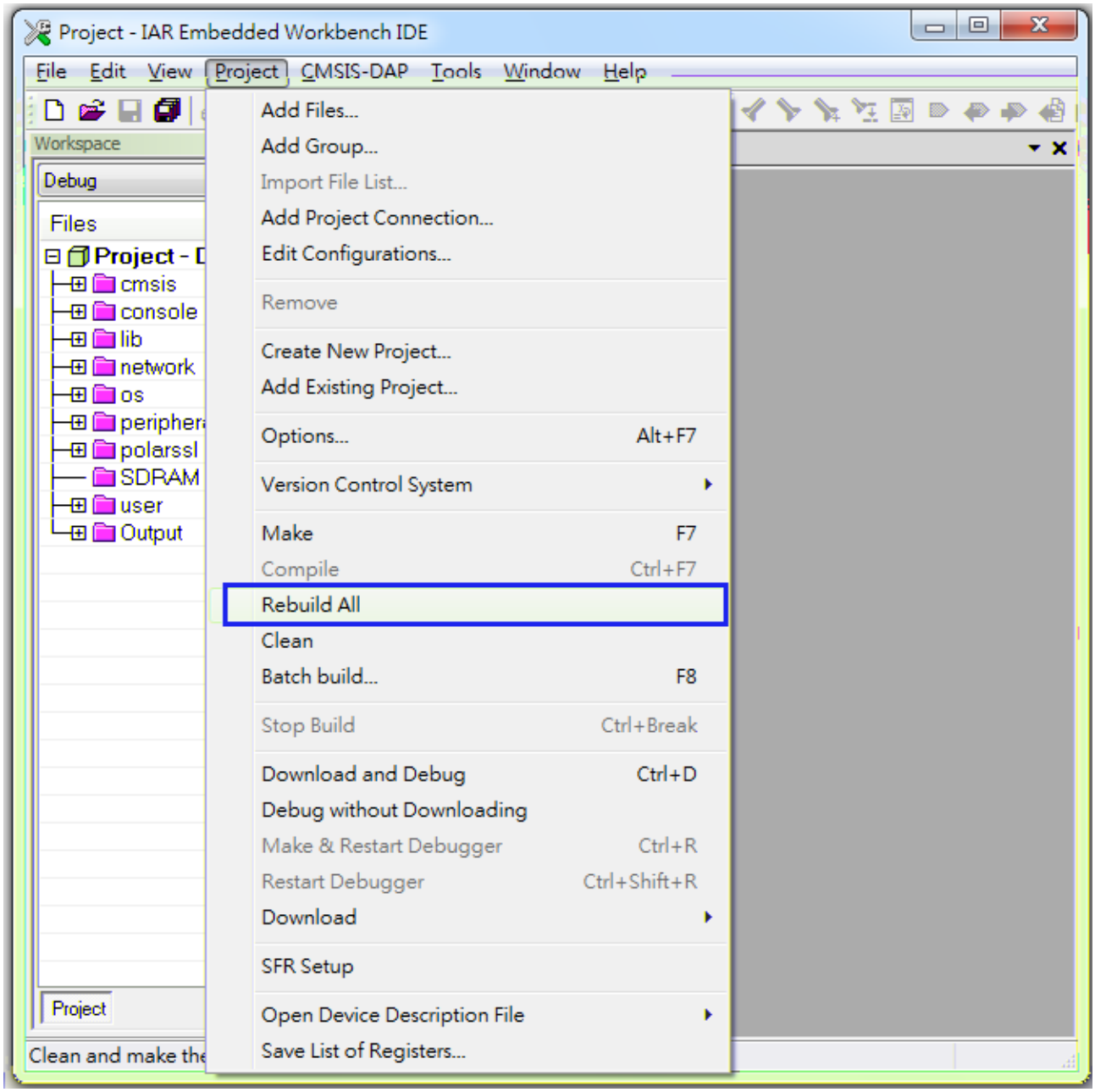
Step 1: Open IAR Workbench

Step 2: To open project, click File Open Workspace

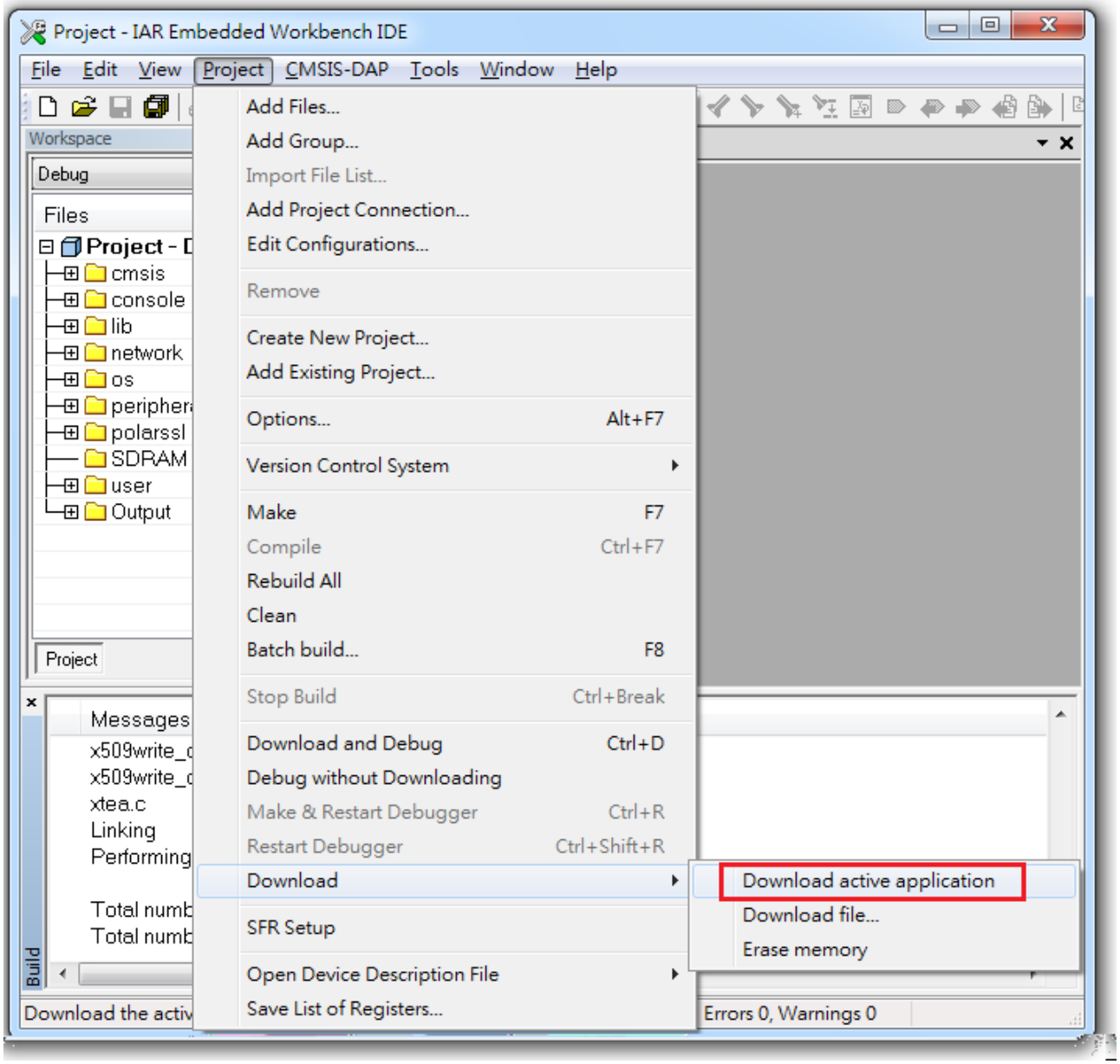


Step 3: Select Project.eww in project\project_name_xxxx\EWARM-RELEASE

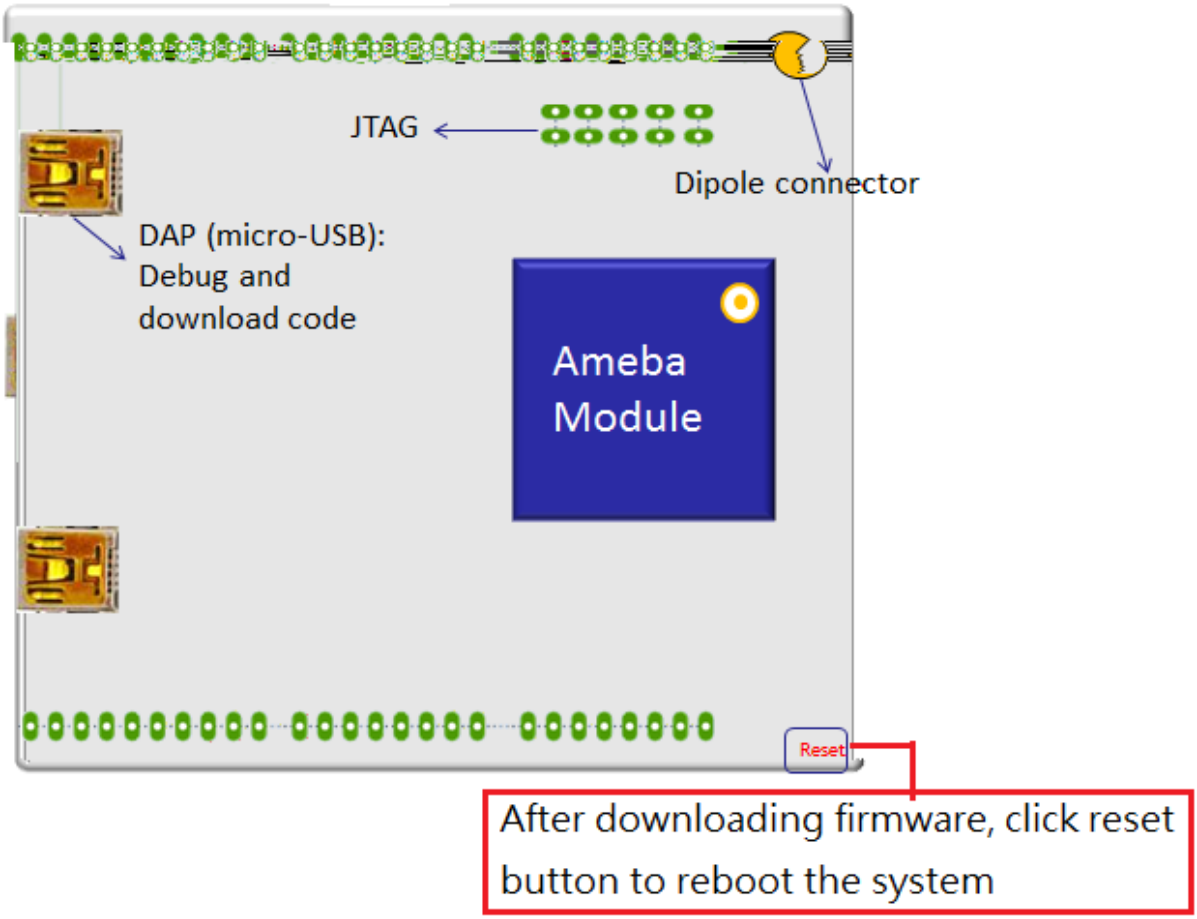
Step 4: To build project, click Project Rebuild All



Step 5: To download code, Click Project Download Download active application.

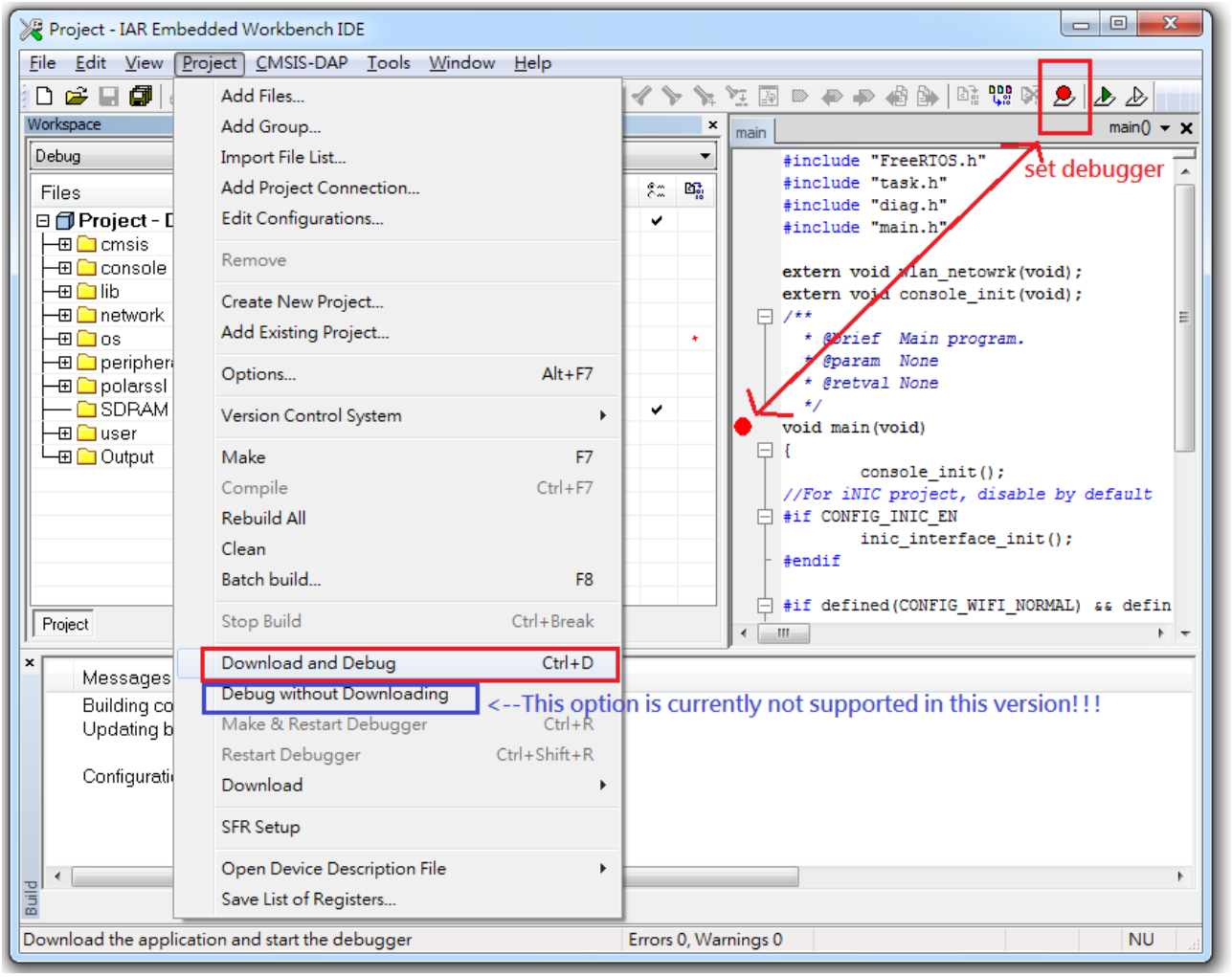


After firmware download, click reset button to reboot the system



How to debug

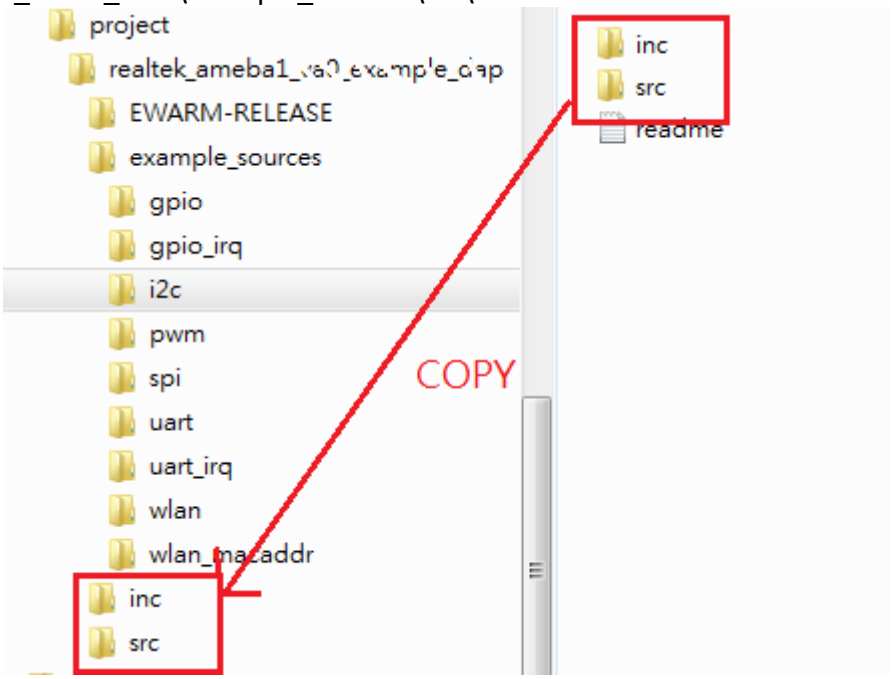
Set Break point. To debug or trace code step by step, click Project Download and Debug.



5. How to use sample code

There are several peripheral example code under folder “project\project_name_xxxx\ example_sources \”, you can copy & paste the example’s “inc” and “src” to project folder.

Ex. To use i2c example code, you can copy “src” and “inc” from “project\project_name_xxxx\example_sources\i2c\”.



Ameba API follows mbed API. User can check mbed website for peripheral API.