NuMicro® Family
VSCode
Quick Start Guide

For additional information or questions, please contact: Nuvoton Technology Corporation.

www.nuvoton.com

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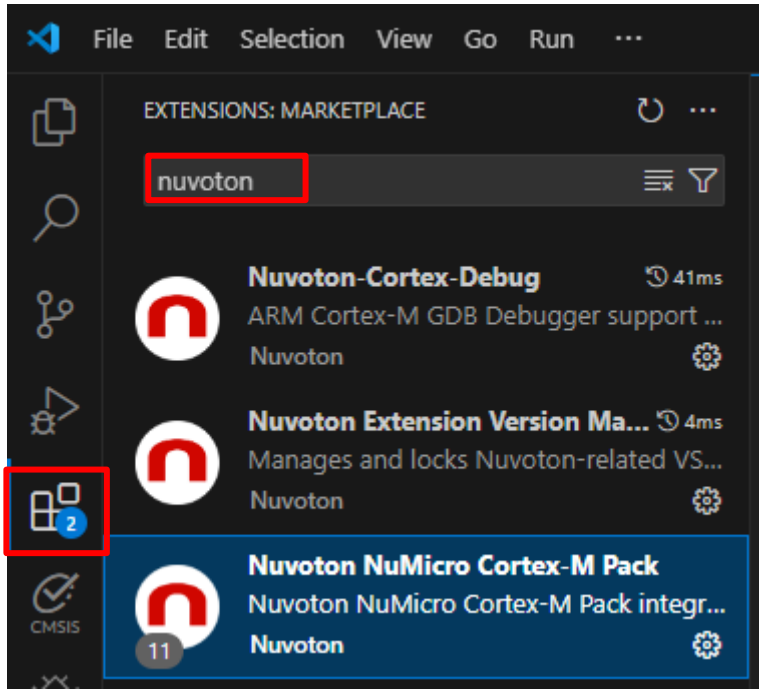
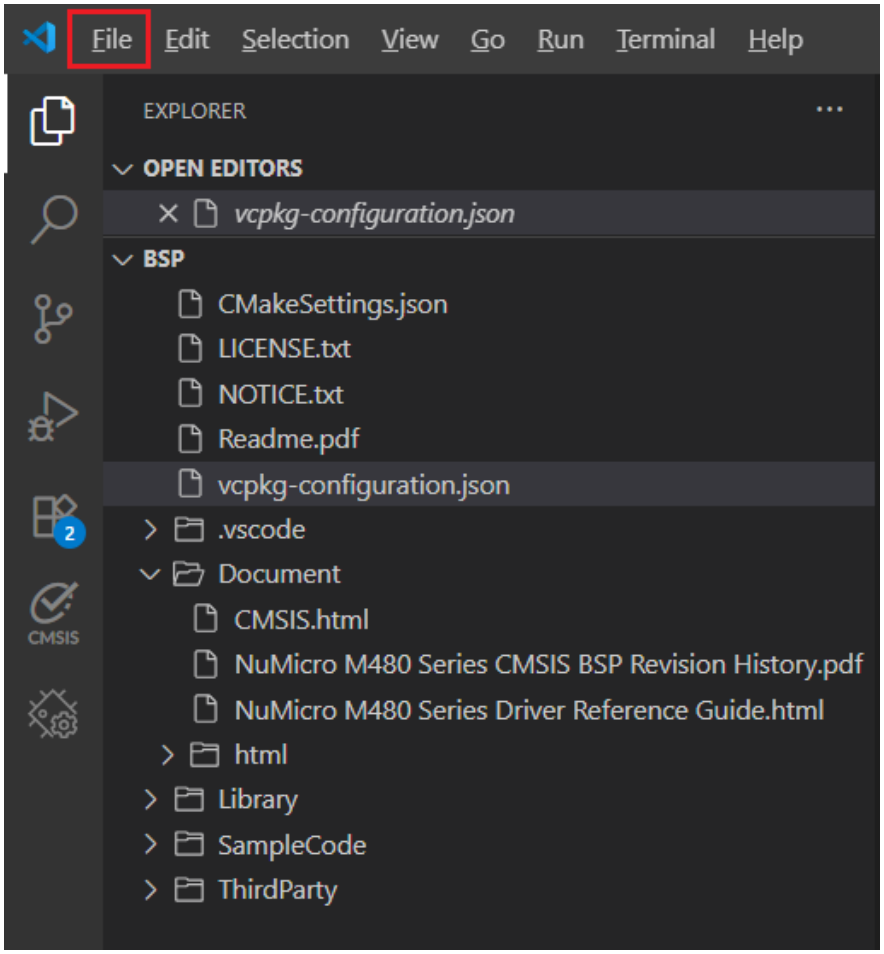
1 INSTALLATION VSCODE AND EXTENSIONS

1. Download VSCode from https://code.visualstudio.com and install it.
2. Launch VSCode and click Extensions in the Activity Bar.
3. Text "**Nuvoton NuMicro Cortex-M Pack Extension**" in search bar. Click install it.

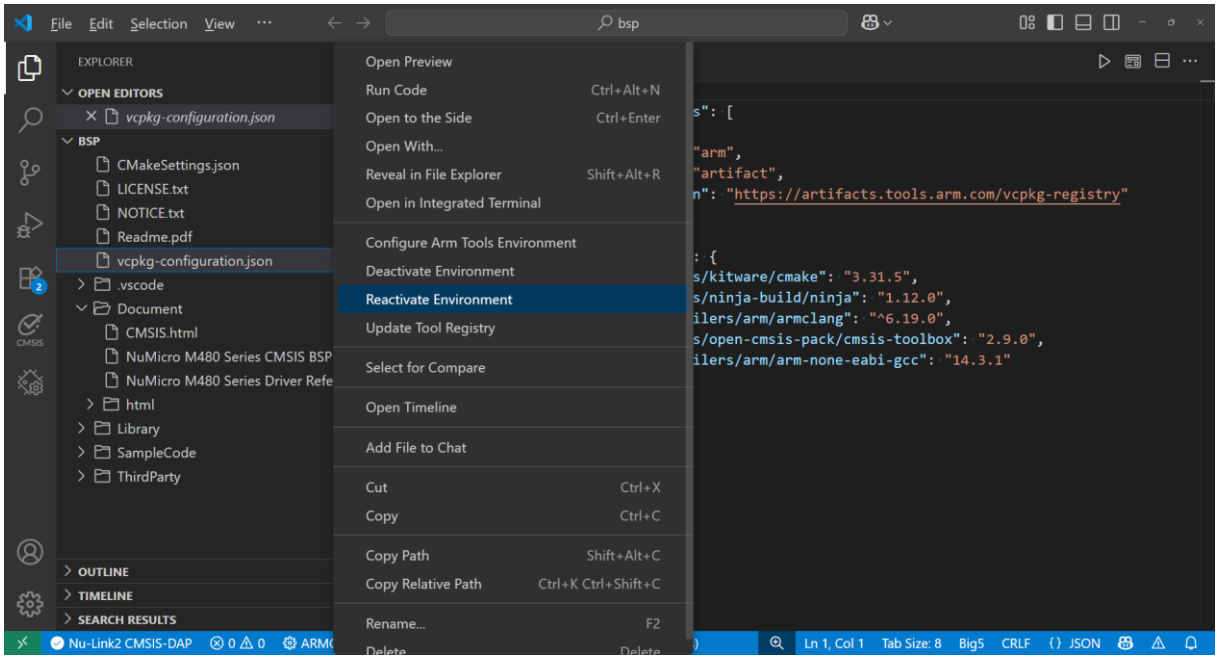


2 GET STARTED WITH AN EXAMPLE PROJECT

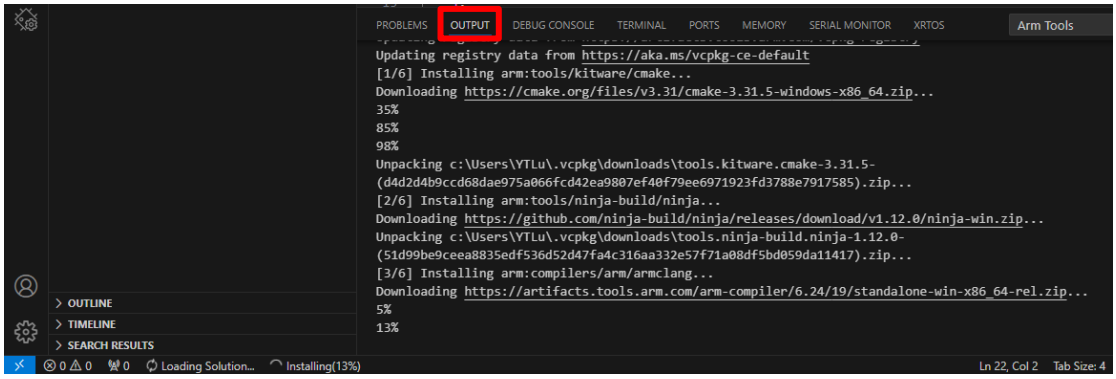
1. Click **File** and select **"Open Folder"** in the toolbar. Then select the path of the example project as below.



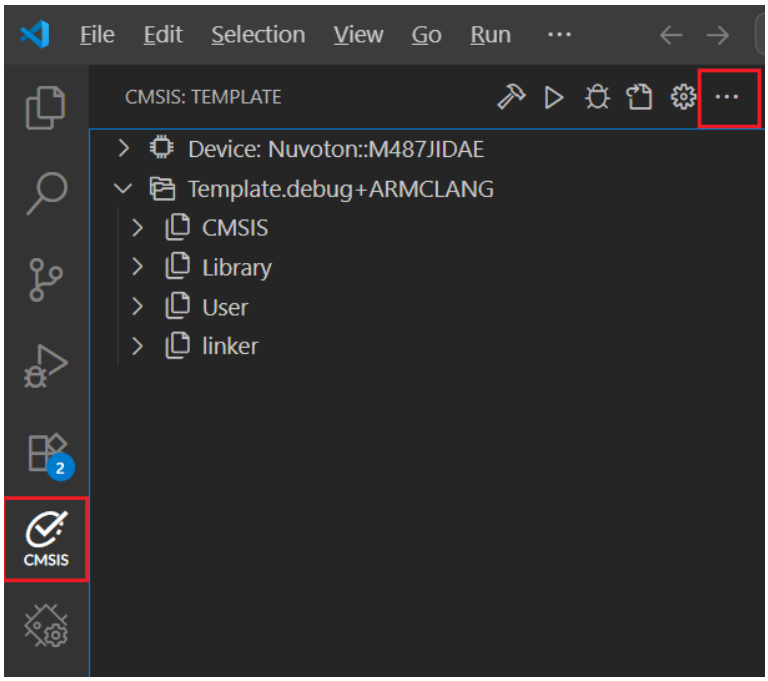
2. Right-click vcpkg-configuration.json and select **Activate Environment**. (Please use private network connection)



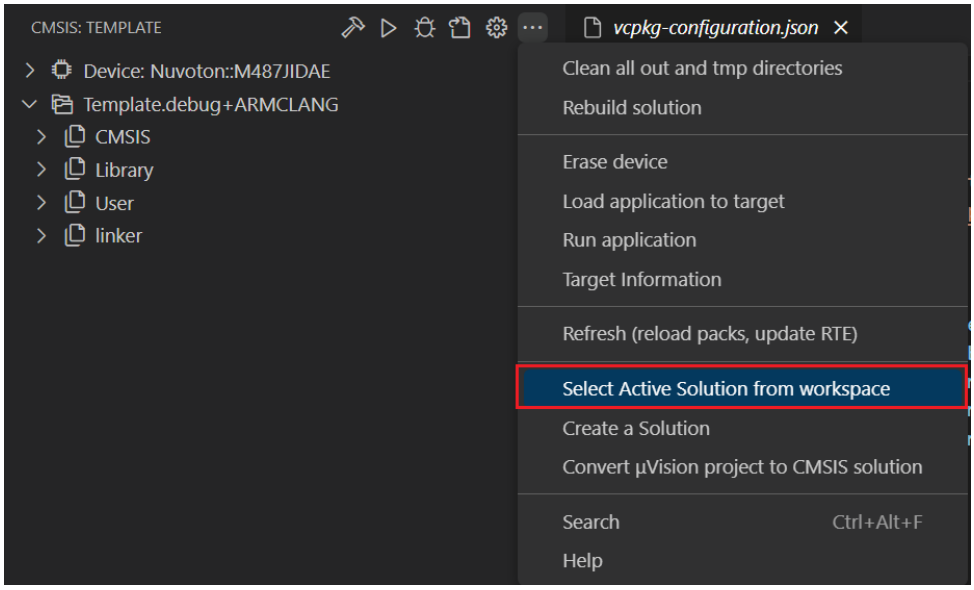
3. Check OUTPUT terminal at the bottom. It will download and install the requires tools.



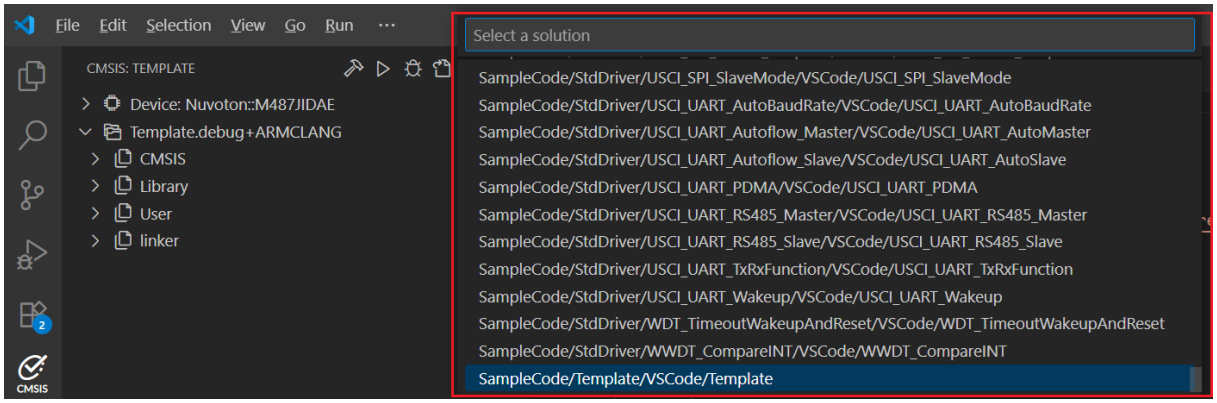
4. Click CMSIS in the Activity Bar.
   Then click “Views and More Actions” button.



5. Select Active solution from workspace.

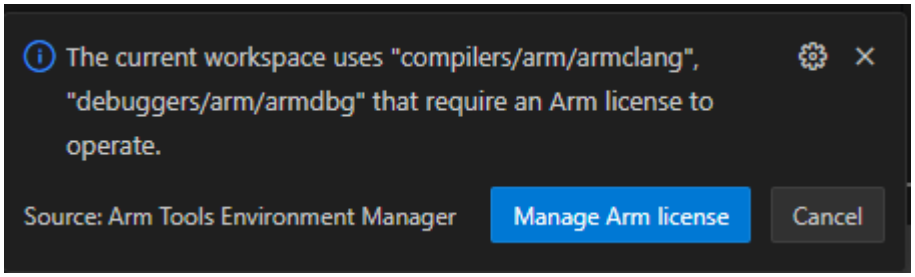


6. Select an example code to active it.

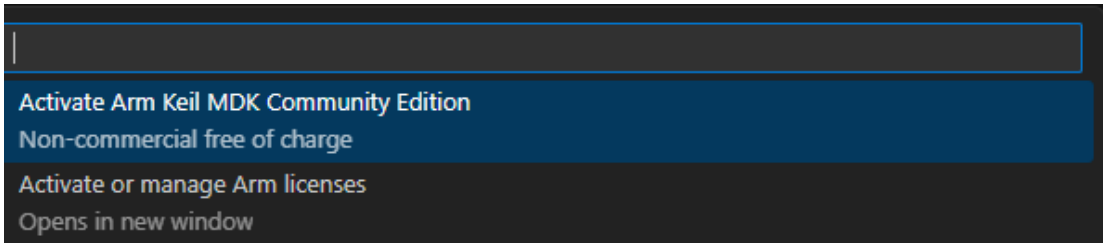


3 MANAGE ARM LICENSE

1. Click **Manage Arm License** in the pop-up window at the bottom right.

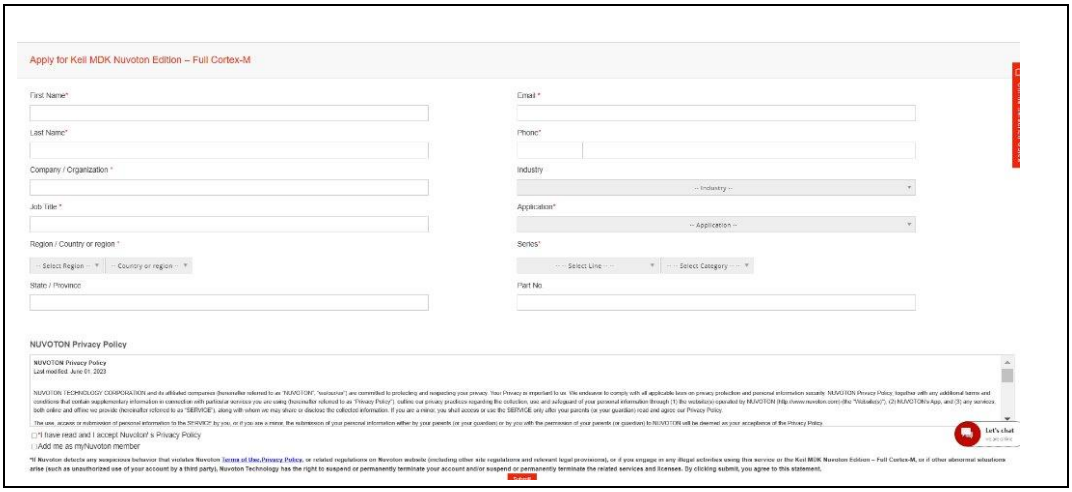


2. In the search bar at the top, select "**Activate or manage Arm licenses**" from the available options.

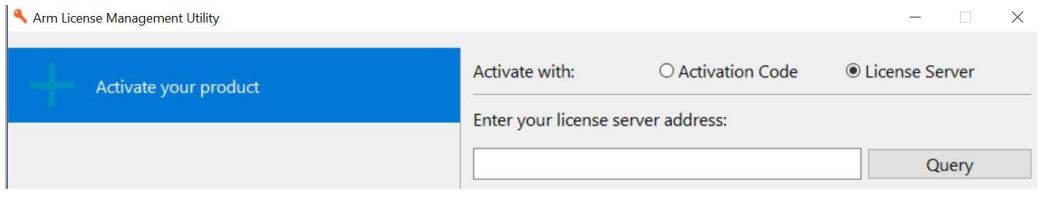


3. Get Keil MDK License ID code
   a. Navigation to Official Website

   b. Fill Out the Form

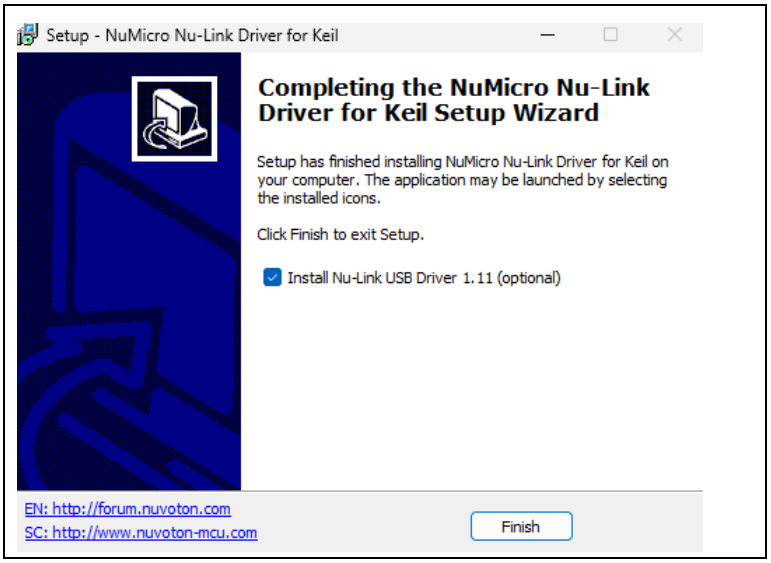


c. Check Mailbox and Fill in the License Server

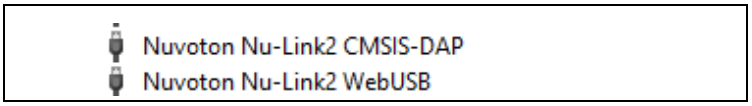


4 CONFIGURE THE DEVICE

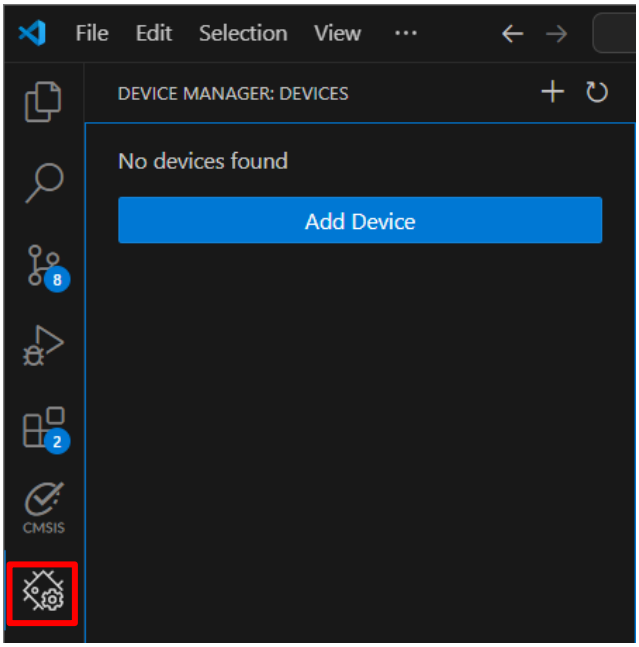
1. Install Nuvoton Nu-Link Keil Driver
2. After installing the Keil driver, please check the box to install the Nu-Link USB Driver.



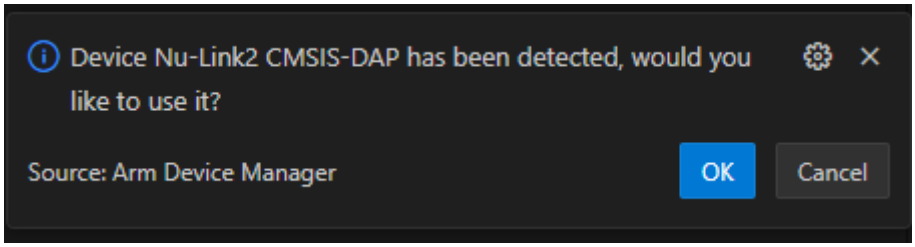
3. Installation complete in Device Manager



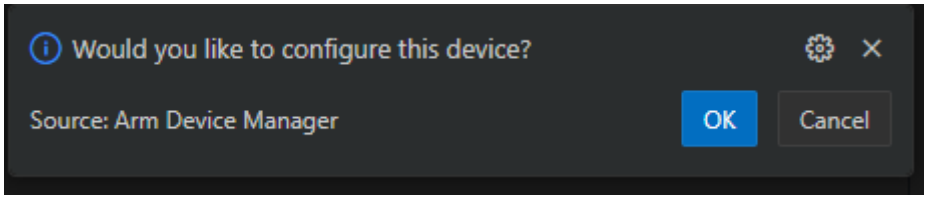
4. Click Device Manager in the Activity Bar to open the Device Manager.



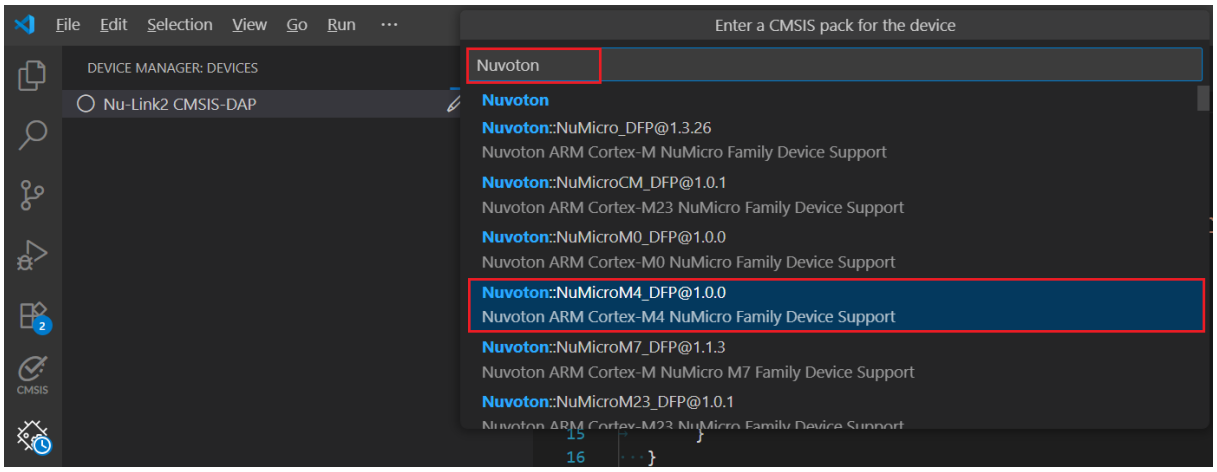
5. Connect device to your computer over USB.
   The Device Manager detects the board and displays a pop-up message.
   Press OK in the pop-up message and use it.



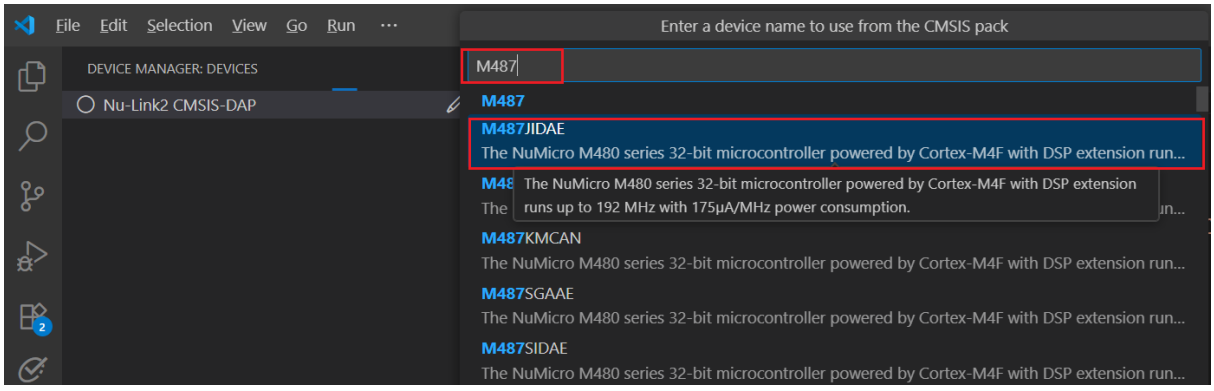
6. Press OK in the pop-up message and configure this device.



7. Text “nuvoton” in search bar and select CMSIS pack for the device.

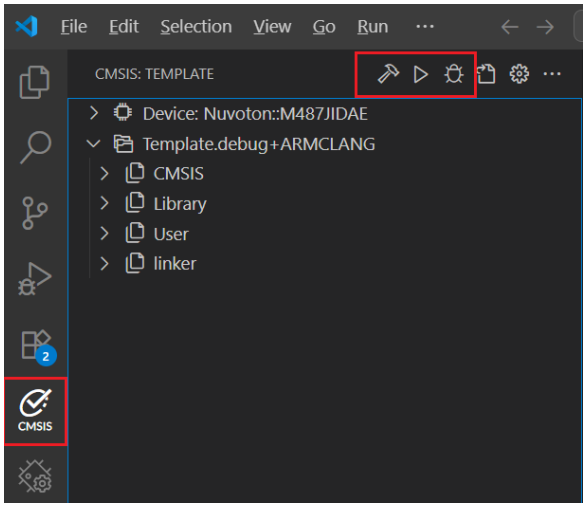


8. Text “device model number” in search bar.



5 RUN THE EXAMPLE PROJECT

1. Click CMSIS in the Activity Bar



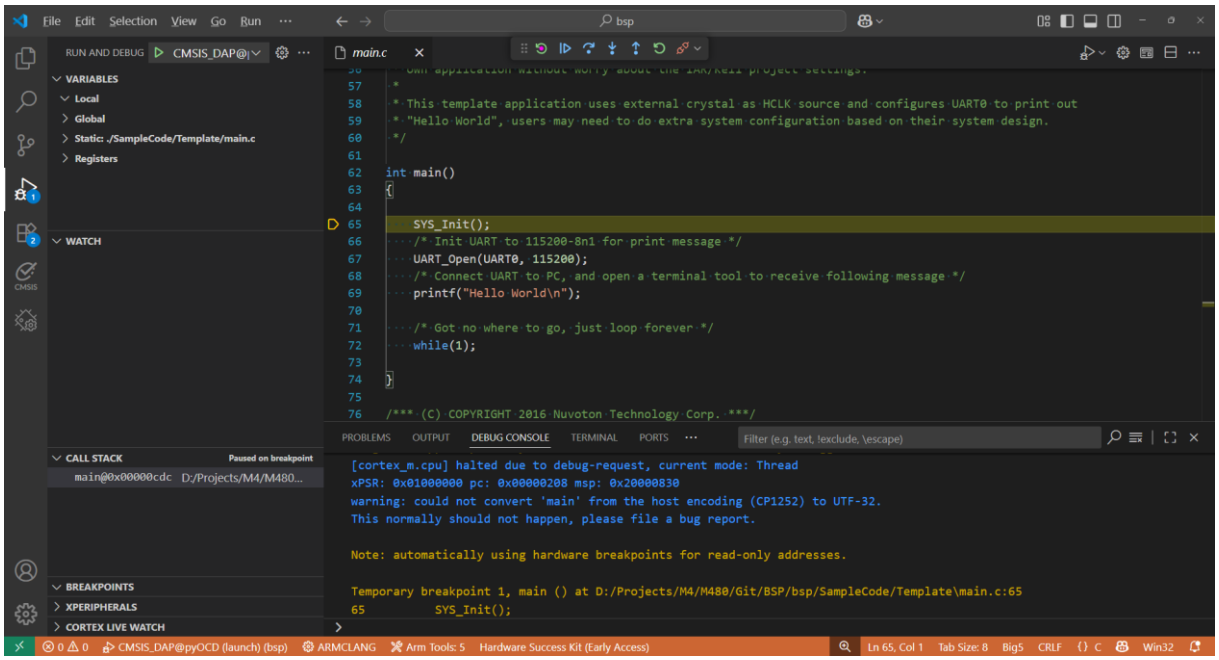
2. Click Build 

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  MEMORY  XRTOS  SERIAL MONITOR

Execute: cbuild d:\Projects\M4\M480\Git\BSP\bsp\SampleCode\Template\VSCode\Template.csolution.yml --context-set --packs
+------------------------------------------------
(1/1) Building context: "Template.debug+ARMCLANG"
Using AC6 V6.24.0 compiler, from: 'c:/Users/Local Admin/.vcpkg/artifacts/2139c4c6/compilers.arm.armclang/6.24.0/bin/'
Building CMake target 'Template.debug+ARMCLANG'
[1/8] Building ASM object CMakeFiles/Group_CMSIS.dir/D_/Projects/M4/M480/Git/BSP/bsp/Library/Device/Nuvoton/M480/Source/ARM/startup_M480_vsac
6.o
[2/8] Building C object CMakeFiles/Group_Library.dir/D_/Projects/M4/M480/Git/BSP/bsp/Library/StdDriver/src/sys.o
[3/8] Building C object CMakeFiles/Group_Library.dir/D_/Projects/M4/M480/Git/BSP/bsp/Library/StdDriver/src/uart.o
[4/8] Building C object CMakeFiles/Group_Library.dir/D_/Projects/M4/M480/Git/BSP/bsp/Library/StdDriver/src/clk.o
[5/8] Building C object CMakeFiles/Group_CMSIS.dir/D_/Projects/M4/M480/Git/BSP/bsp/Library/Device/Nuvoton/M480/Source/system_M480.o
[6/8] Building C object CMakeFiles/Group_Library.dir/D_/Projects/M4/M480/Git/BSP/bsp/Library/StdDriver/src/retarget.o
[7/8] Building C object CMakeFiles/Group_User.dir/D_/Projects/M4/M480/Git/BSP/bsp/SampleCode/Template/main.o
[8/8] Linking C executable D:\Projects\M4\M480\Git\BSP\bsp\SampleCode\Template\VSCode\out\Template\ARMCLANG\debug\Template.axf
Program Size: Code=4556 RO-data=168 RW-data=44 ZI-data=5724

+------------------------------------------------------------
Build summary: 1 succeeded, 0 failed - Time Elapsed: 00:00:05
+============================================================
Completed: cbuild succeed with exit code 0
Build complete
 *  Terminal will be reused by tasks, press any key to close it.
```

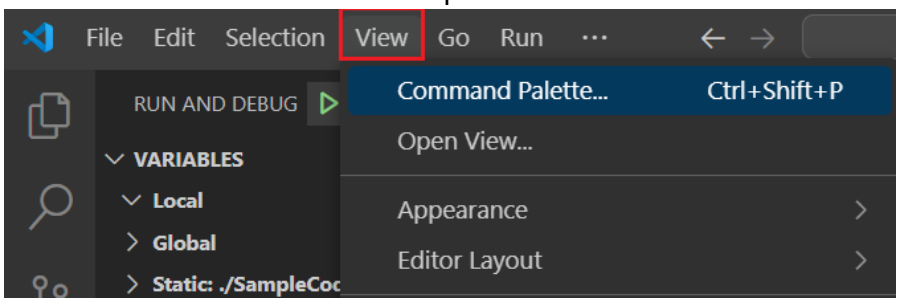
3. Click Load & Run 

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  MEMORY  XRTOS  SERIAL MONITOR

 *  Executing task: pyocd load --probe cmsisdap: --cbuild-run d:\Projects\M4\M480\Git\BSP\bsp\SampleCode\Template\VSCode\
Template+ARMCLANG.cbuild-run.yml

0001648 I Loading D:\Projects\M4\M480\Git\BSP\bsp\SampleCode\Template\VSCode\out\Template\ARMCLANG\debug\Template.axf [lo
ad_cmd]
[==================================================] 100%
0002141 I Erased 8192 bytes (2 sectors), programmed 8192 bytes (2 pages), skipped 0 bytes (0 pages) at 16.30 kB/s [loader
]
 *  Terminal will be reused by tasks, press any key to close it.
```

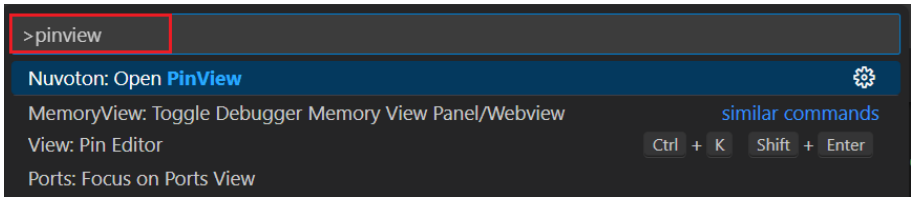
4. Click Load & Debug 
   The debugger stops at the main function.

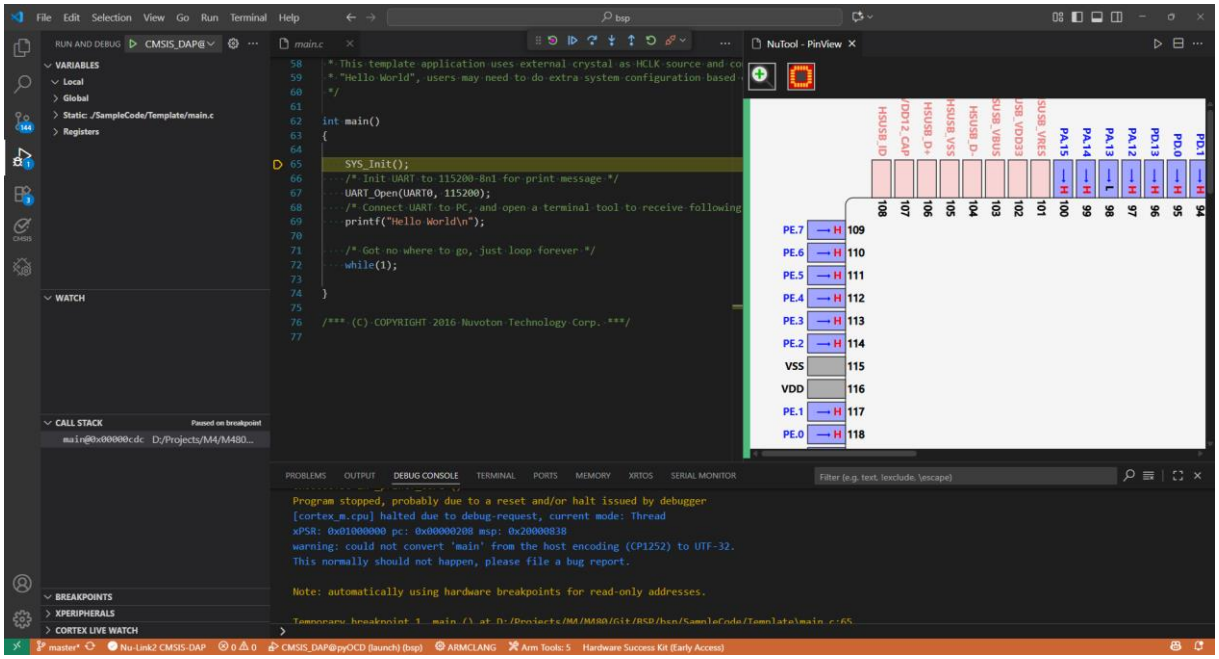


5. Click View and select “Command palette” in the toolbar.

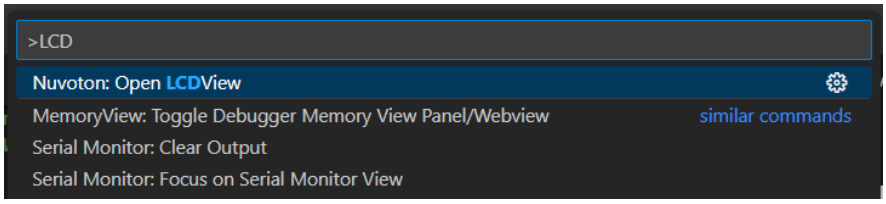


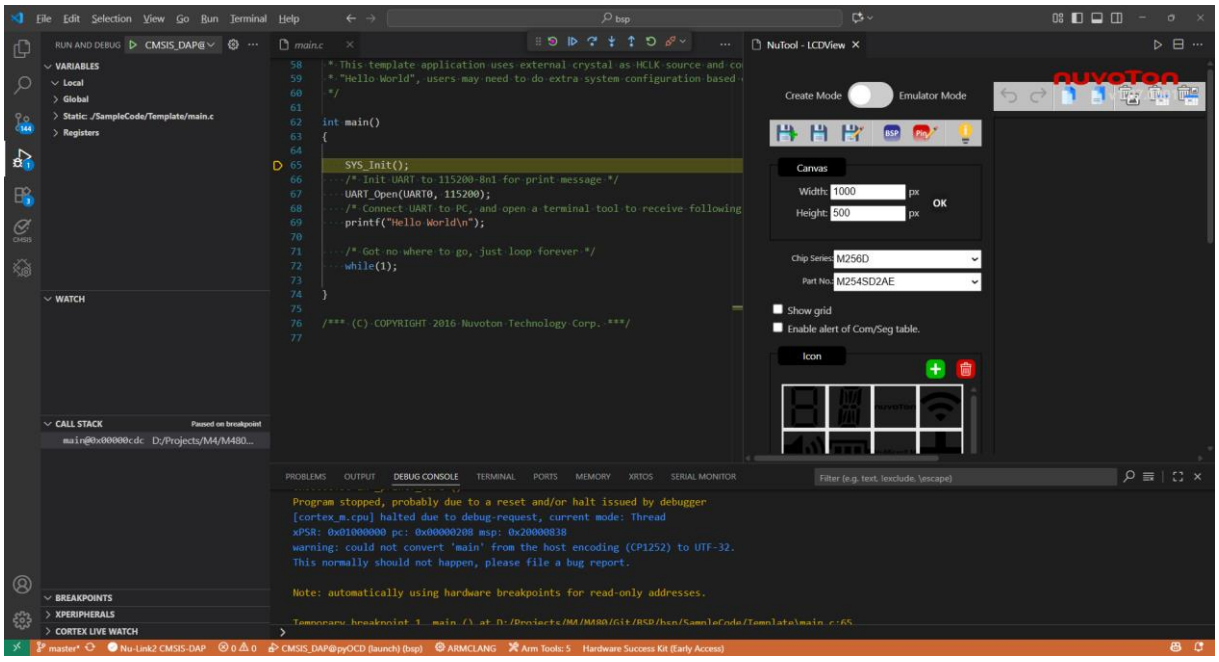
6. Text “**Nuvoton:Open PinView**” in search bar to open PinView tool.





7. Text “**Nuvoton:Open PinLCD**” in search bar to open PinLCD tool.





REVISION HISTORY

Date	Revision	Description
2025.09.16	1.00	1. Initially version.

Important Notice

Nuvoton Products are neither intended nor warranted for usage in systems or equipment, any malfunction or failure of which may cause loss of human life, bodily injury or severe property damage. Such applications are deemed, "Insecure Usage".

Insecure usage includes, but is not limited to: equipment for surgical implementation, atomic energy control instruments, airplane or spaceship instruments, the control or operation of dynamic, brake or safety systems designed for vehicular use, traffic signal instruments, all types of safety devices, and other applications intended to support or sustain life.

All Insecure Usage shall be made at customer's risk, and in the event that third parties lay claims to Nuvoton as a result of customer's Insecure Usage, customer shall indemnify the damages and liabilities thus incurred by Nuvoton.