

NuMicro® Family

VSCode

Quick Start Guide

The information described in this document is the exclusive intellectual property of Nuvoton Technology Corporation and shall not be reproduced without permission from Nuvoton.

Nuvoton is providing this document only for reference purposes of NuMicro microcontroller based system design. Nuvoton assumes no responsibility for errors or omissions.

All data and specifications are subject to change without notice.

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

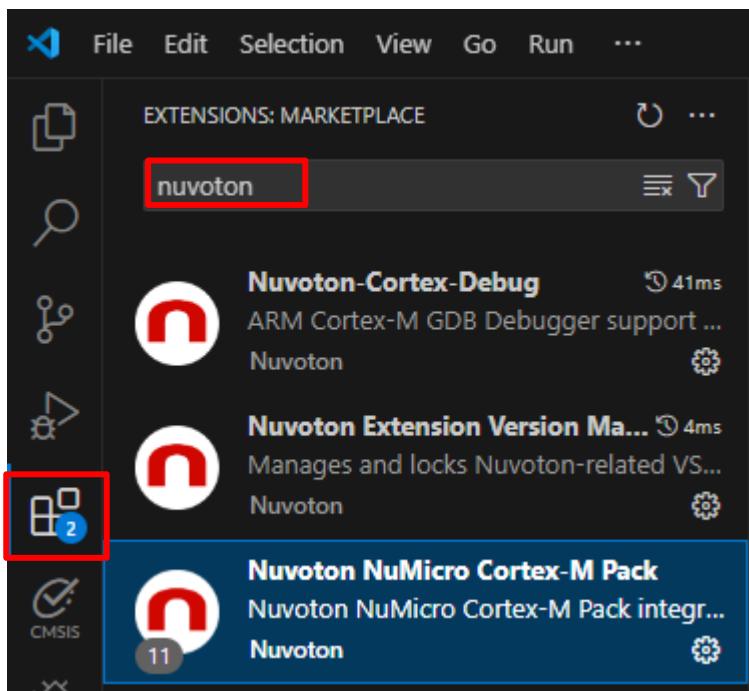
www.nuvoton.com

TABLE OF CONTENTS

1	INSTALLATION VS CODE AND EXTENSIONS	3
2	GET STARTED WITH AN EXAMPLE PROJECT.....	4
3	MANAGE ARM LICENSE.....	8
4	CONFIGURE THE DEVICE	10
5	RUN THE EXAMPLE PROJECT	12

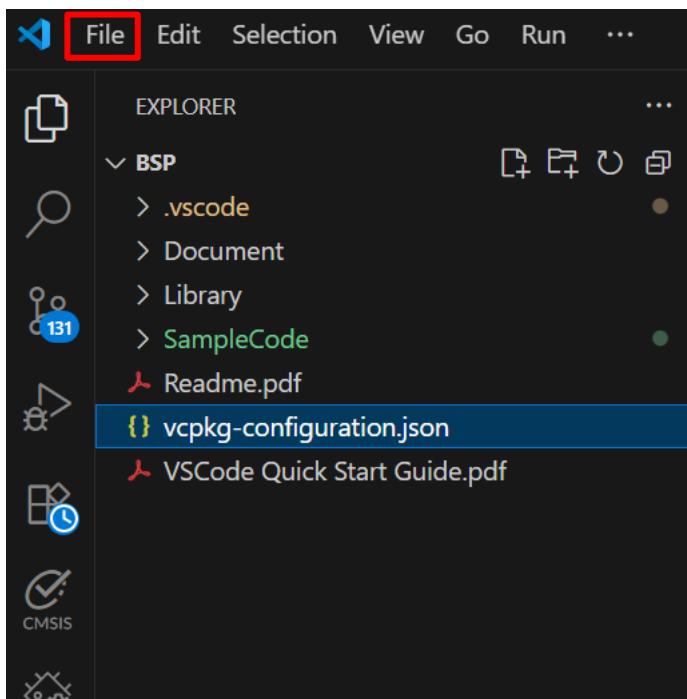
1 INSTALLATION VS CODE AND EXTENSIONS

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.

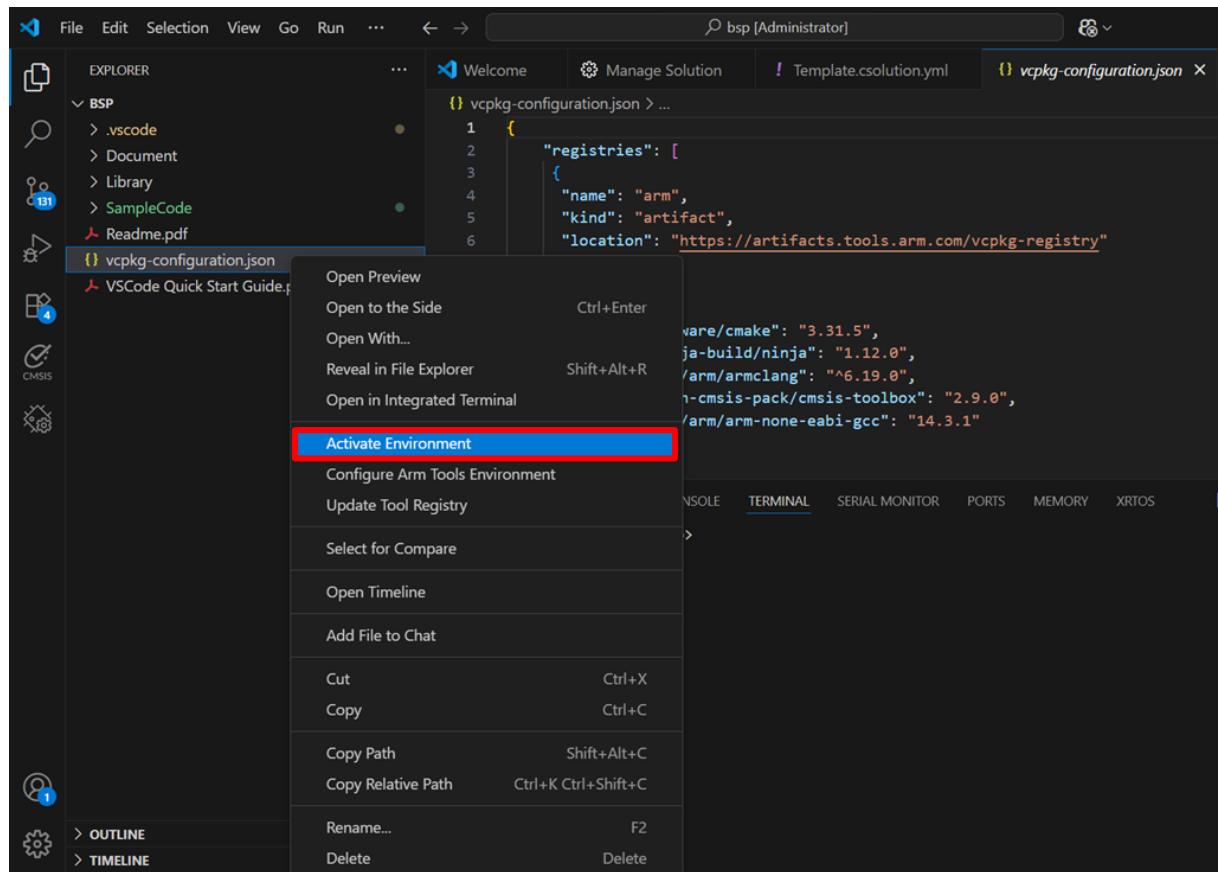


2 GET STARTED WITH AN EXAMPLE PROJECT

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)



- Check OUTPUT terminal at the bottom. It will download and install the required tools.

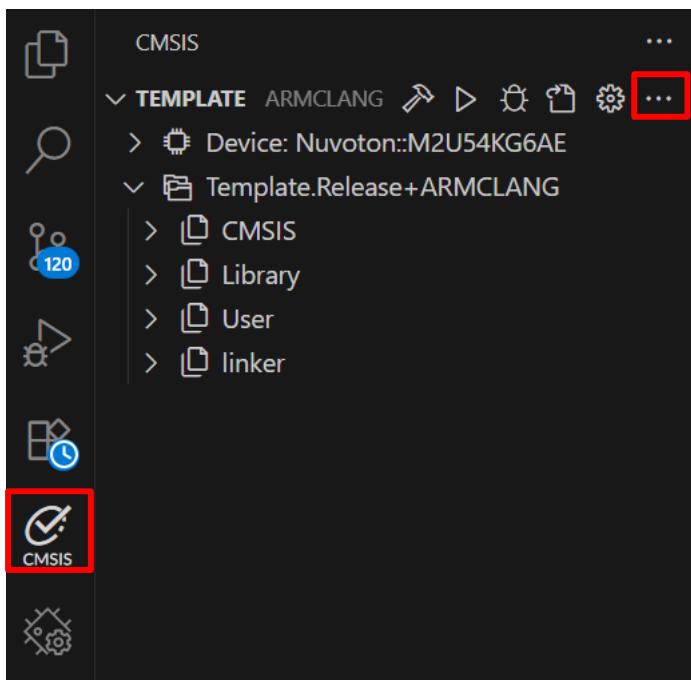
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS MEMORY SERIAL MONITOR XRTOS Arm Tools
Upgrading registry data from https://aka.ms/vcpkg-ce-default
[1/6] Installing arm:tools/kitware/cmake...
Downloading https://cmake.org/files/v3.11/cmake-3.11.5-windows-x86_64.zip...
35%
85%
98%
Unpacking c:/Users\YTLu\.vcpkg\downloads\tools.kitware.cmake-3.11.5- (44d2d4b9cc6d8da975a0e6fc42ea9807ef40f79ee6971923fd3788e7917585).zip...
[2/6] Installing arm:tools/ninja-build/ninja...
Downloading https://github.com/ninja-build/ninja/releases/download/v1.12.0/ninja-win.zip...
Unpacking c:/Users\YTLu\.vcpkg\downloads\tools.ninja-build.ninja-1.12.0- (51d9b9e9ceea8835edf536d52d47fa4c316aa332e57f71a08df5bd059da11417).zip...
[3/6] Installing arm:compilers/arm/armclang...
Downloading https://artifacts.tools.arm.com/arm-compiler/6.24/19/standalone-win-x86_64-rel.zip...
5%
13%
Ln 22, Col 2 Tab Size: 4

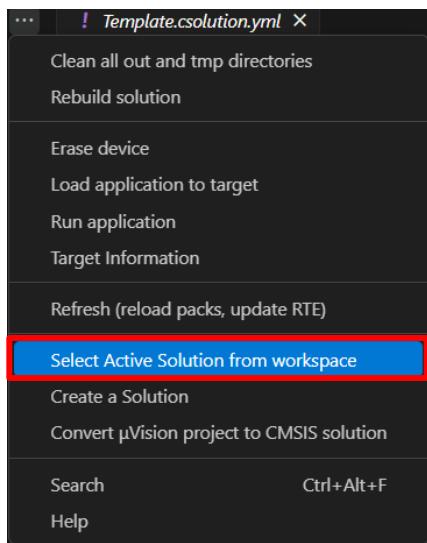
```

- Click CMSIS in the Activity Bar.

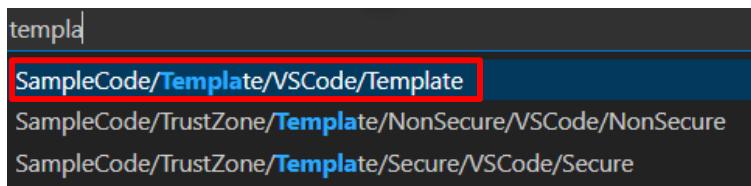
Then click “Views and More Actions” button.



- Select Active solution from workspace.

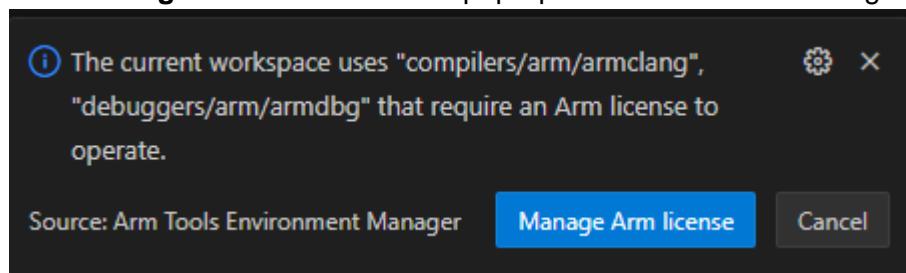


6. Select an example code to active it.

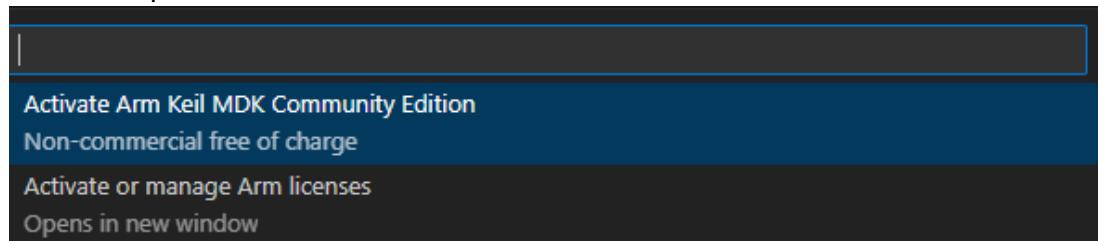


3 MANAGE ARM LICENSE

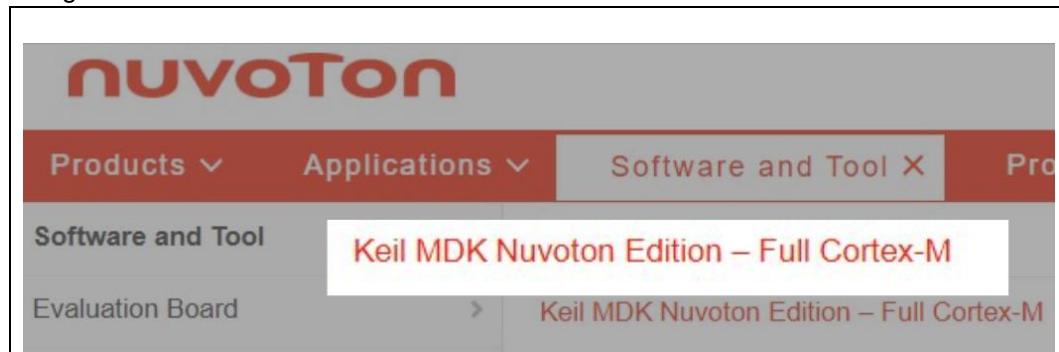
1. Click **Manage Arm License** in the pop-up window at the bottom right.



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**

Apply for Keil MDK Nuvoton Edition – Full Cortex-M

<p>First Name*</p> <input type="text"/>	<p>Email*</p> <input type="text"/>
<p>Last Name*</p> <input type="text"/>	<p>Phone*</p> <input type="text"/>
<p>Company / Organization*</p> <input type="text"/>	<p>Industry</p> <div style="border: 1px solid #ccc; padding: 2px;"> ... Industry Application Series ... </div>
<p>Job Title*</p> <input type="text"/>	
<p>Region / Country or region*</p> <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;"> Select Region Country or region </div>	
<p>State / Province</p> <input type="text"/>	

NUVOTON Privacy Policy

NUVOTON Privacy Policy
Last modified June 01, 2022

NUVOTON TECHNOLOGY CORPORATION and its affiliated companies (hereinafter referred to as "NUVOTON", "we/us") are committed to protecting and respecting your privacy. If you have any questions or concerns, we welcome you to contact us with any additional terms and conditions that certain regulatory information in connection with particular services you are using (hereinafter referred to as "Privacy Policy"), defines our privacy practices regarding the collection, use and disclosure of your personal information through (1) the websites operated by NUVOTON (<http://www.nuvoton.com> ("Website")), (2) NUVOTON App, and (3) any services, tools and/or software (hereinafter referred to as "SERVICES") along with whom we may share or disclose the collected information. If you are a minor, you shall assume or use the SERVICES only after your parents (or your guardian) read and agree our Privacy Policy.

The "SERVICES" are the services provided to you by NUVOTON or to whom you have given permission to provide the SERVICES to you, or if you are a minor, the permission of your parent or guardian. In NUVOTON will be deemed as your acceptance of the Privacy Policy.

I have read and I accept NUVOTON's Privacy Policy

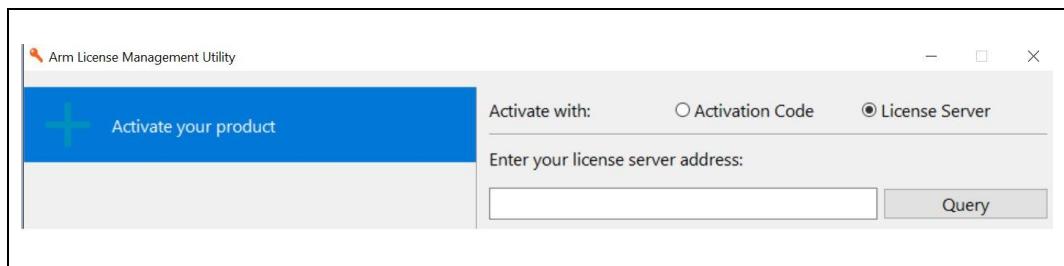
I agree that my information is used for marketing purposes

"If Nuvoton detects any suspicious behavior that violates Nuvoton's Terms of Use, Privacy Policy, or related regulation on Nuvoton website (including other site regulation and relevant legal provisions), or if you engage in any illegal activities using this service or the Keil MDK Nuvoton Edition – Full Cortex-M, or if other abnormal situations arise (such as unauthorized use of your account by a third party), Nuvoton Technology has the right to suspend or permanently terminate the related services and licenses. By clicking submit, you agree to this statement.



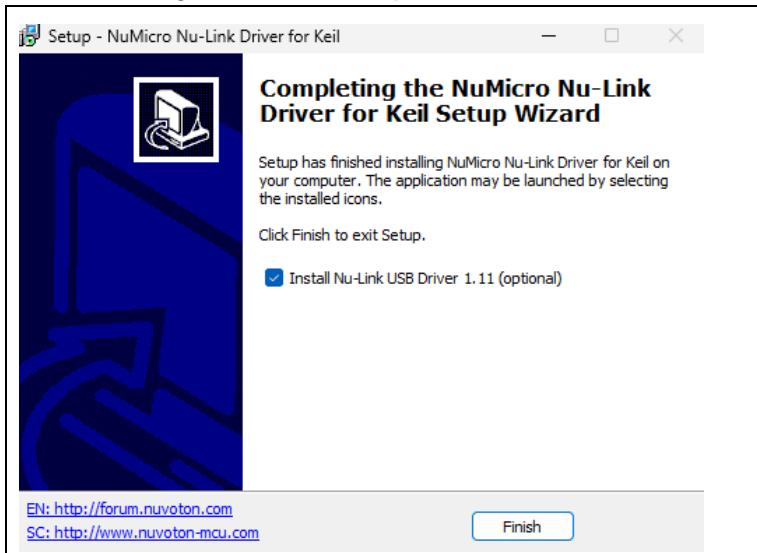
Let's chat
at www.nuvoton.com/contact-us

c. Check Mailbox and Fill in the License Server

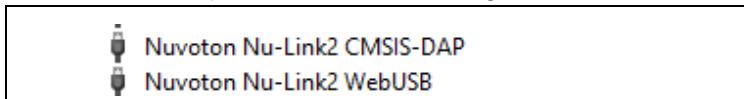


4 CONFIGURE THE DEVICE

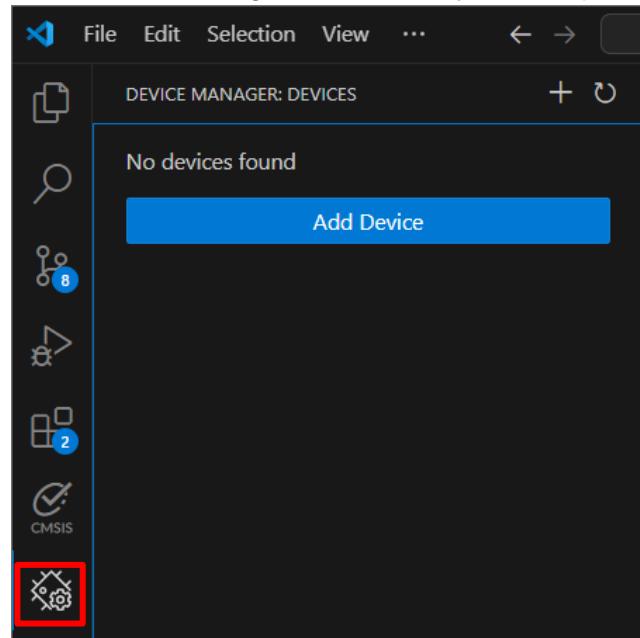
1. Install Nuvoton Nu-Link Keil Driver
2. After installing the Keil driver, please check the box to install the Nu-Link USB Driver.



3. Installation complete in Device Manager

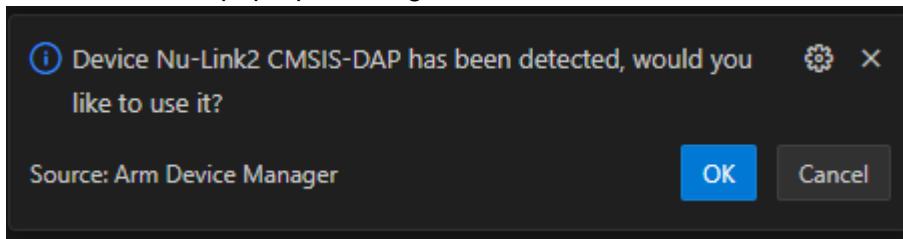


4. Click Device Manager in the Activity Bar to open the Device Manager.

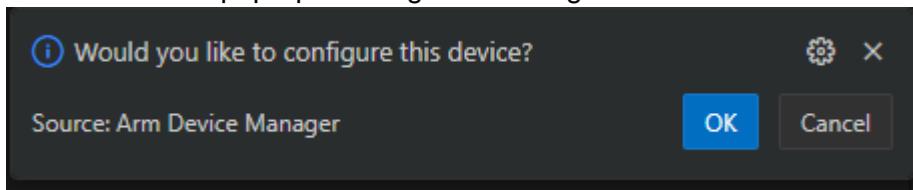


5. Connect device to your computer over USB.

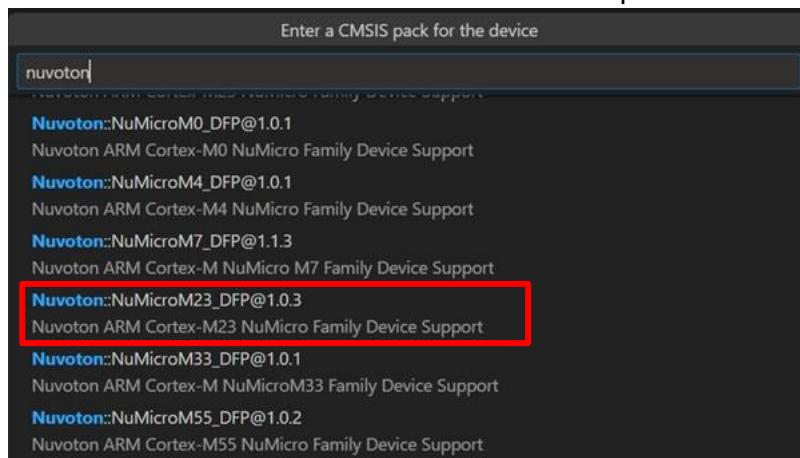
The Device Manager detects the board and displays a pop-up message. Press OK in the pop-up message and use it.



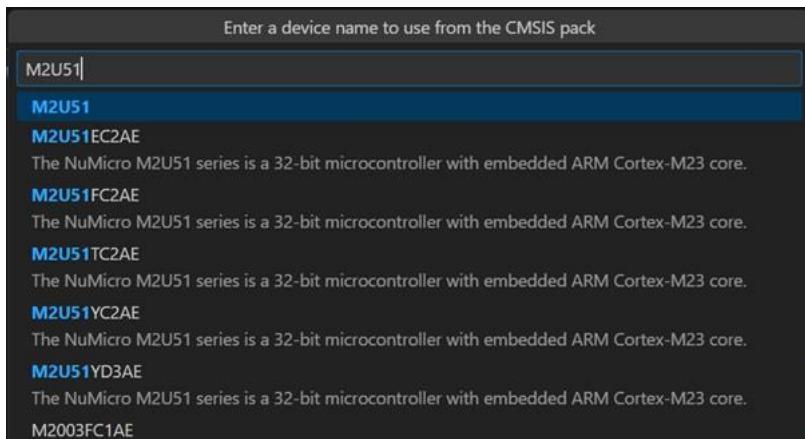
6. Press OK in the pop-up message and configure this device.



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

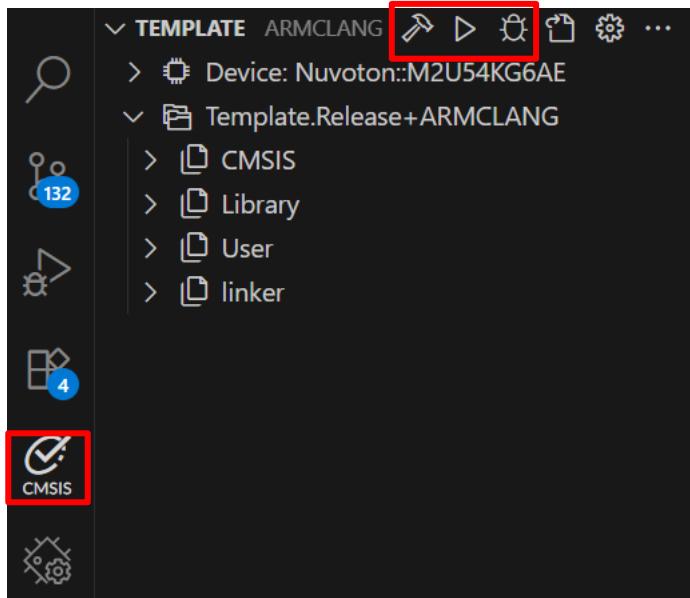


8. Text “device model number” in search bar.



5 RUN THE EXAMPLE PROJECT

- ## 1. Click CMSIS in the Activity Bar



- ## 2. Click Build

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL SERIAL MONITOR PORTS MEMORY XRTOS  Build ✓ + ×   ... [ ] x

U51.o
[3/8] Building C object CMakeFiles/Group_User.dir/C_/_SPCheng/Git/M2U51/bsp/SampleCode/Template/main.o
[4/8] Building C object CMakeFiles/Group_Library.dir/C_/_SPCheng/Git/M2U51/bsp/Library/StdDriver/src/sys.o
[5/8] Building C object CMakeFiles/Group_CMSIS.dir/C_/_SPCheng/Git/M2U51/bsp/Library/Device/Nuvoton/M2U51/Source/ARM/startup_M2U51.o
[6/8] Building C object CMakeFiles/Group_Library.dir/C_/_SPCheng/Git/M2U51/bsp/Library/StdDriver/src/uart.o
[7/8] Building C object CMakeFiles/Group_Library.dir/C_/_SPCheng/Git/M2U51/bsp/Library/StdDriver/src/clk.o
[8/8] Linking C executable C:\_SPCheng\Git\M2U51\bsp\SampleCode\Template\VSCode\out\Template\ARMCLANG\Release\Template.axf
Program Size: Code=2740 RO-data=540 RW-data=12 ZI-data=3668

+-----+
Build summary: 1 succeeded, 0 failed - Time Elapsed: 00:00:04
+-----+
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

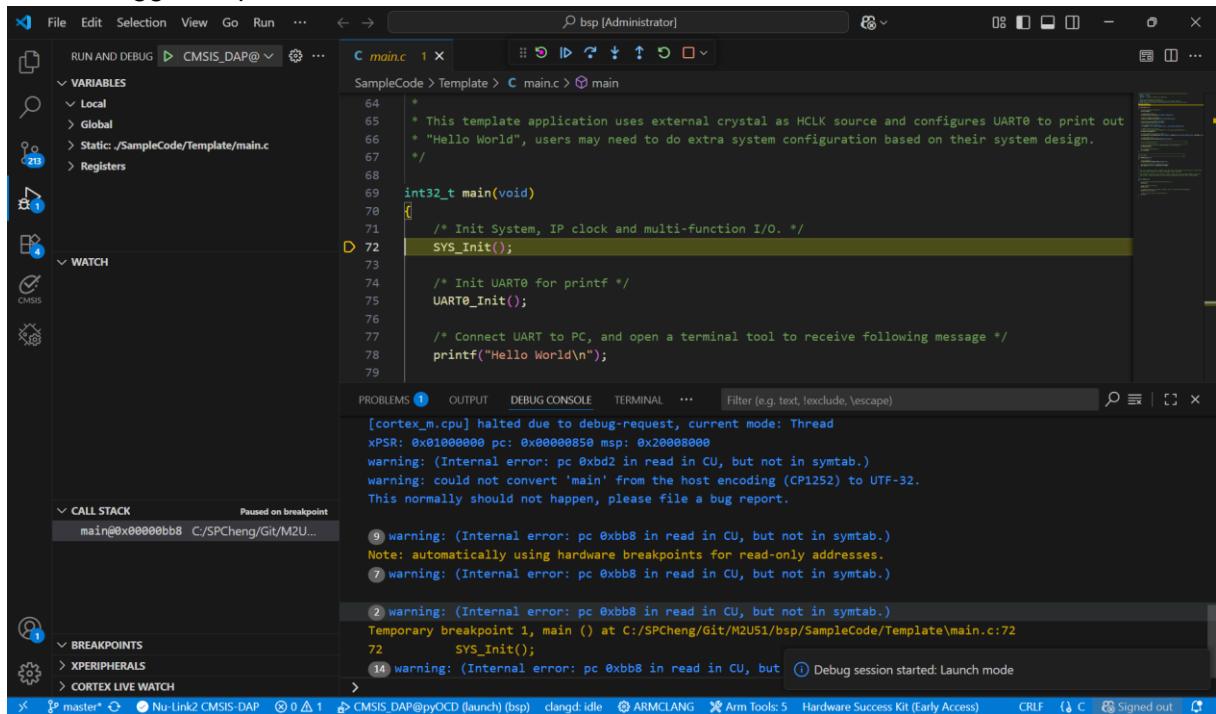
```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL SERIAL MONITOR PORTS ... CMSIS Load - Task ✓ + □ 🗑 ... [ ] X

● * Executing task: pyocd load --probe cmsisdap: --cbuild-run c:\SPCheng\Git\M2U51\bsp\SampleCode\Template\VSCode\Template+ARMCLANG.cbuild-run.yml

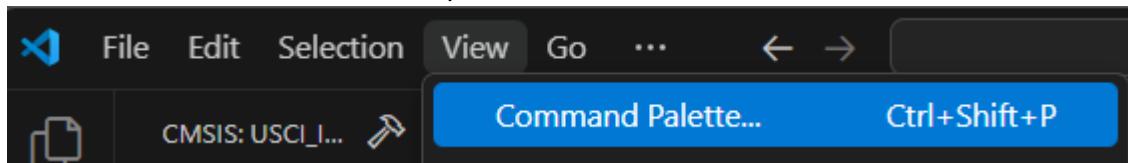
0006699 I Loading C:\SPCheng\Git\M2U51\bsp\SampleCode\Template\VSCode\out\Template\ARMCLANG\Release\Template.axf [load.cmd]
[=====] 100%
0007238 I Erased 3584 bytes (7 sectors), programmed 3584 bytes (7 pages), skipped 0 bytes (0 pages) at 6.49 kB/s [loader]
* Terminal will be reused by tasks, press any key to close it.
```

- #### 4. Click Load & Debug

The debugger stops at the main function.

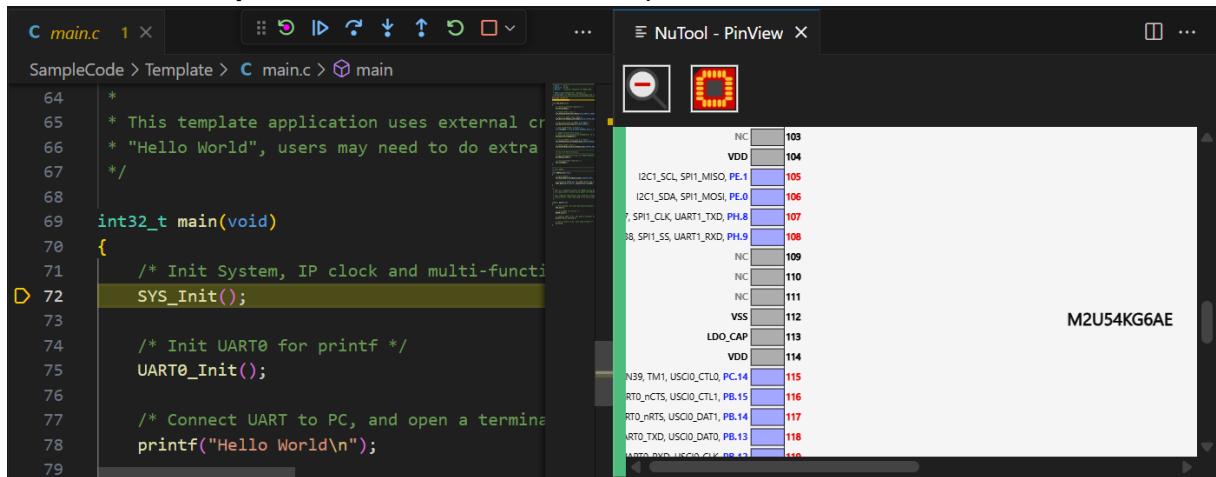


- Click View and select “Command palette” in the toolbar.



- 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
2025.10.28	3.01	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.

Please note that all data and specifications are subject to change without notice.
All the trademarks of products and companies mentioned in this datasheet belong to their respective owners.