

NuMicro[®] Family VSCode Quick Start Guide

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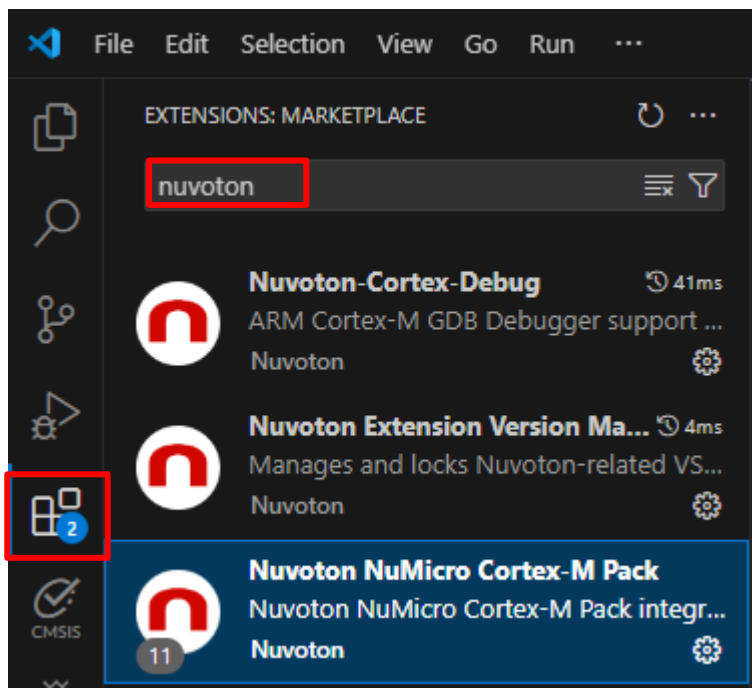
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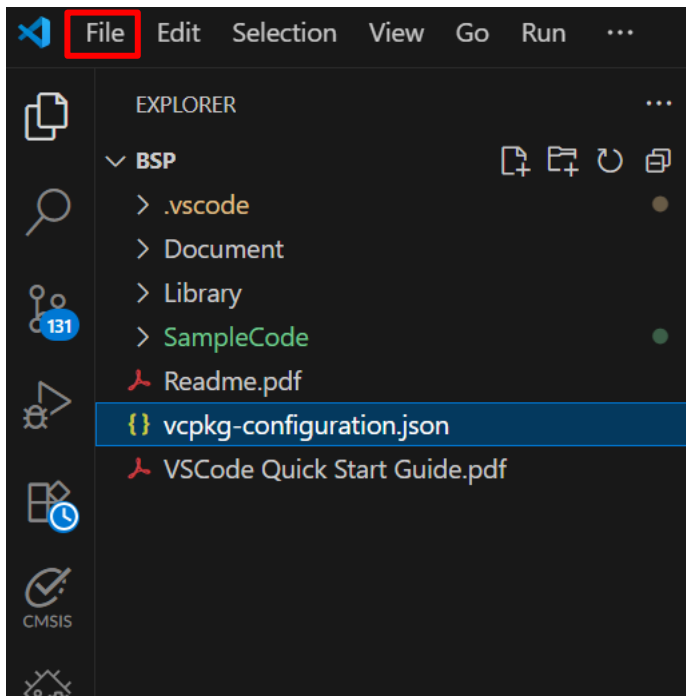
1 INSTALLATION VSCODE AND EXTENSIONS

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.

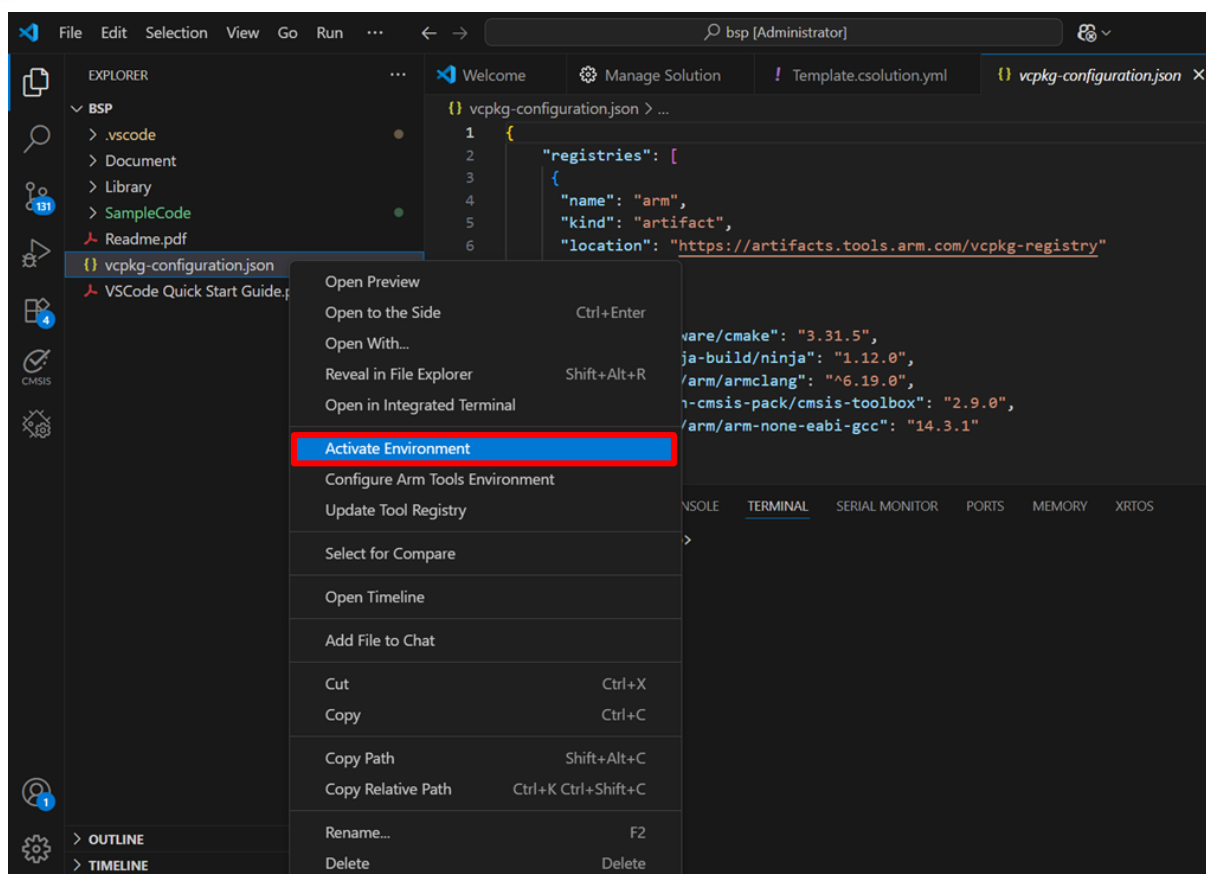


2 GET STARTED WITH AN EXAMPLE PROJECT

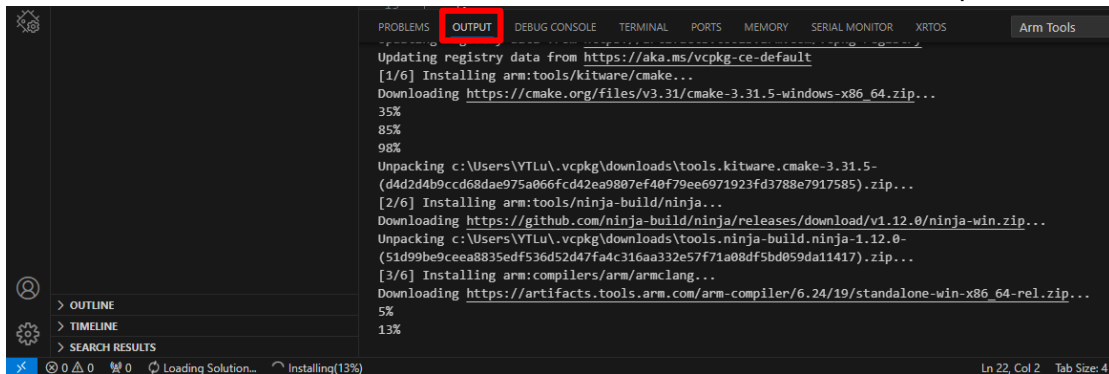
1. Click **File** and select "**Open Folder**" in the toolbar. Then select the path of the example project as below.



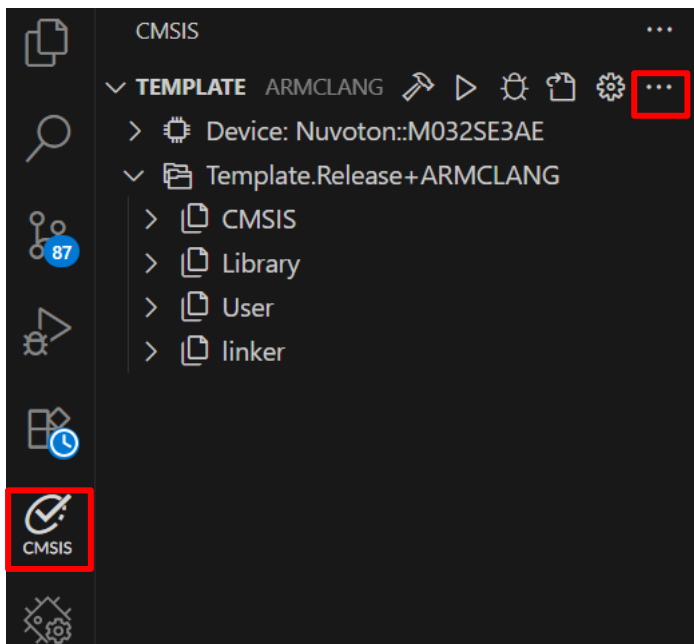
2. Right-click `vcpkg-configuration.json` and select **Activate Environment**. (Please use private network connection)



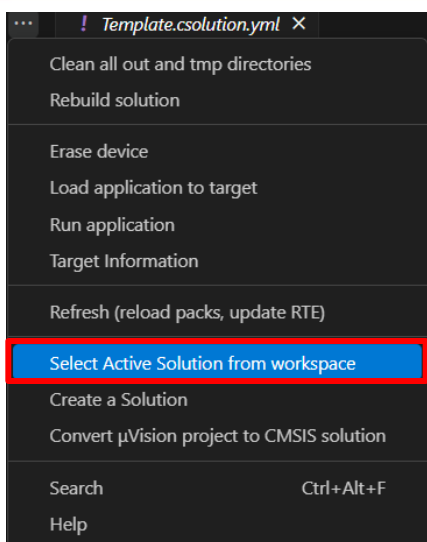
3. Check OUTPUT terminal at the bottom. It will download and install the requires tools.



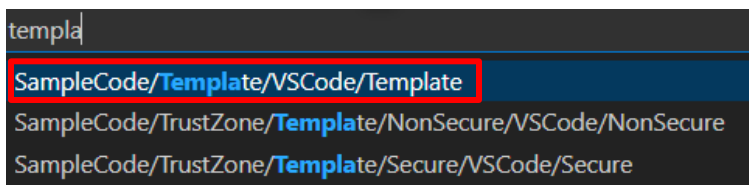
4. Click CMSIS in the Activity Bar.
Then click “Views and More Actions” button.



5. Select Active solution from workspace.

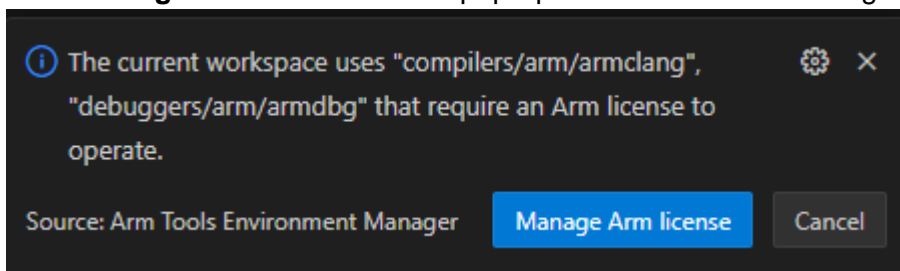


6. Select an example code to activate it.

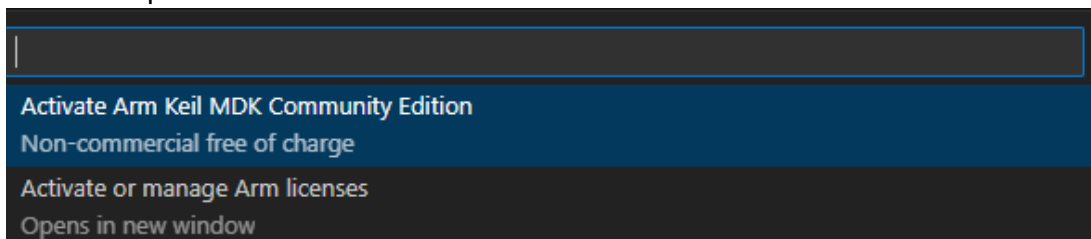


3 MANAGE ARM LICENSE

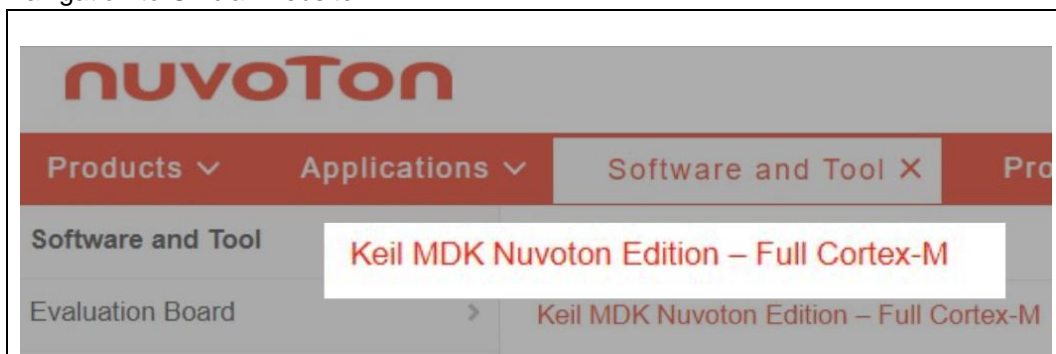
1. Click **Manage Arm License** in the pop-up window at the bottom right.



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

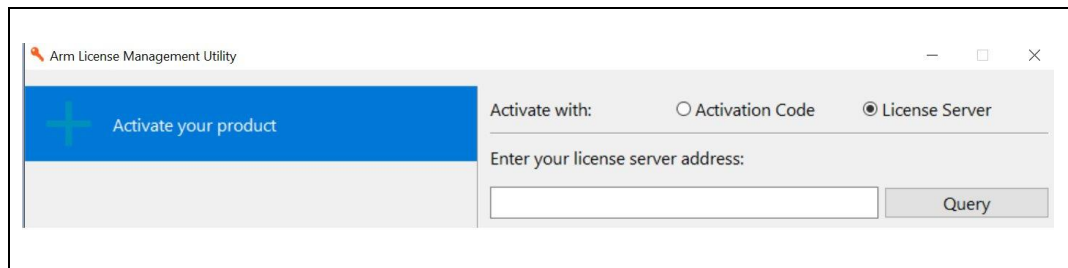


3. Get Keil MDK License ID code
 - a. Navigation to Official Website



- b. Fill Out the Form

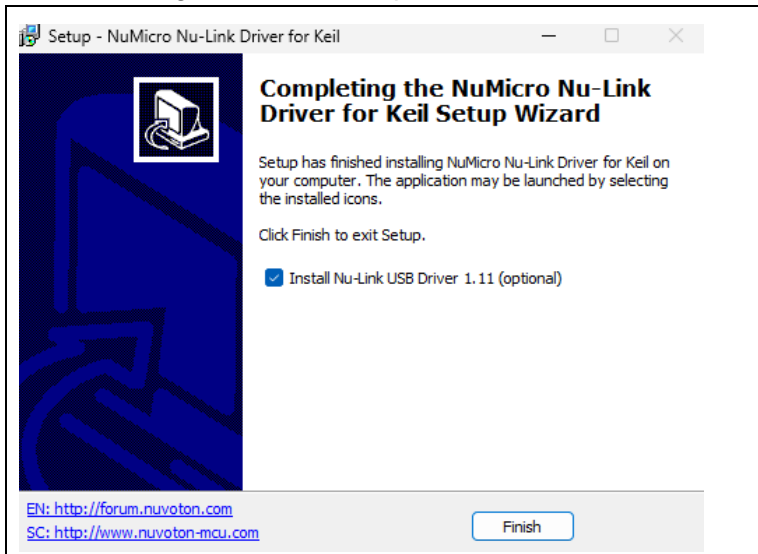
c. Check Mailbox and Fill in the License Server



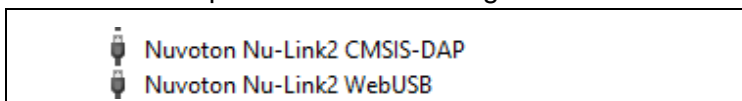
The screenshot shows a window titled "Arm License Management Utility". On the left, there is a blue button with a green plus icon and the text "Activate your product". On the right, there is a section for activation. It starts with "Activate with:" followed by two radio buttons: "Activation Code" (unselected) and "License Server" (selected). Below this, there is a label "Enter your license server address:" followed by a text input field and a "Query" button.

4 CONFIGURE THE DEVICE

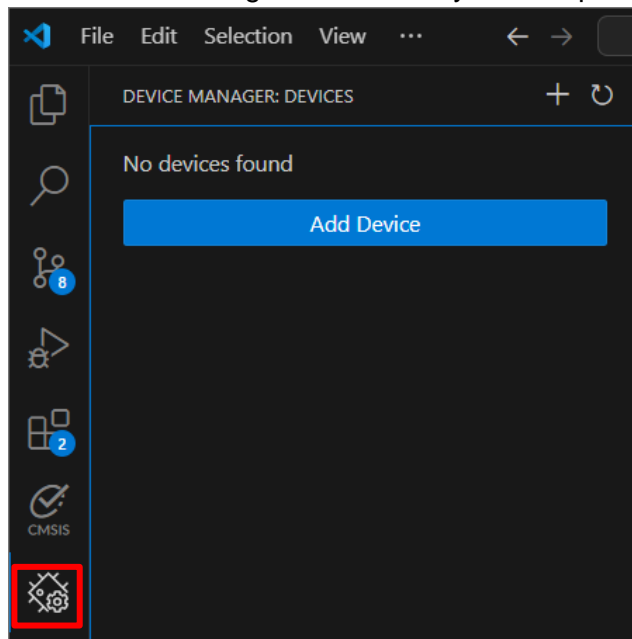
1. Install Nuvoton Nu-Link Keil Driver
2. After installing the Keil driver, please check the box to install the Nu-Link USB Driver.



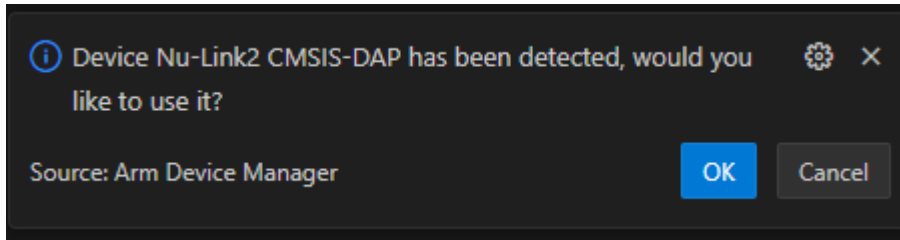
3. Installation complete in Device Manager



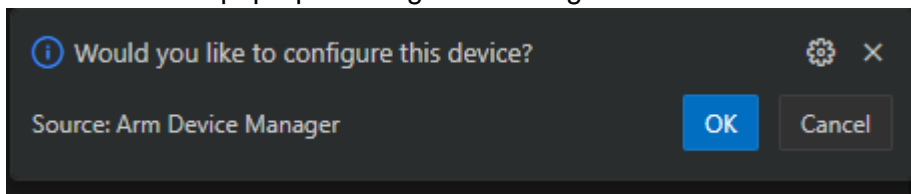
4. Click Device Manager in the Activity Bar to open the Device Manager.



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.



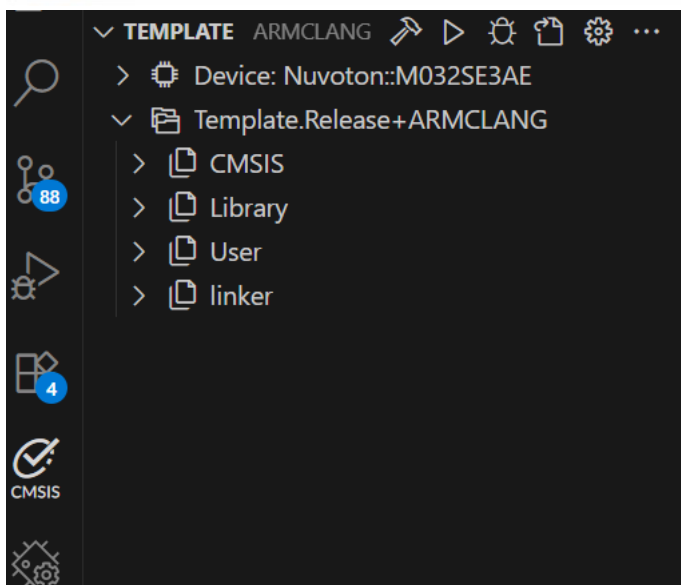
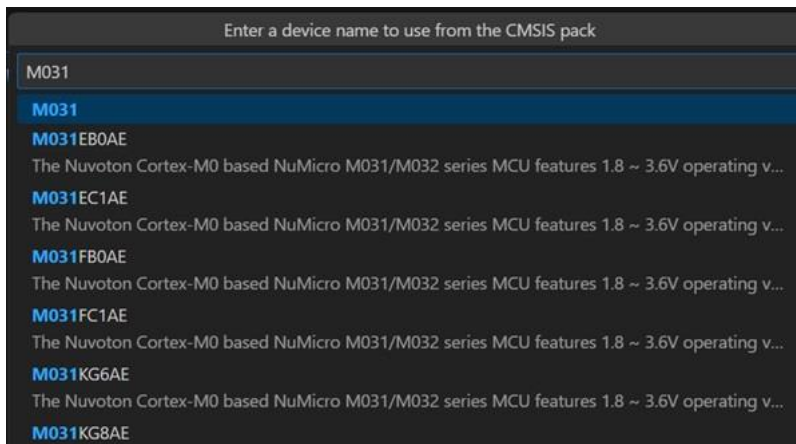
6. Press OK in the pop-up message and configure this device.



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

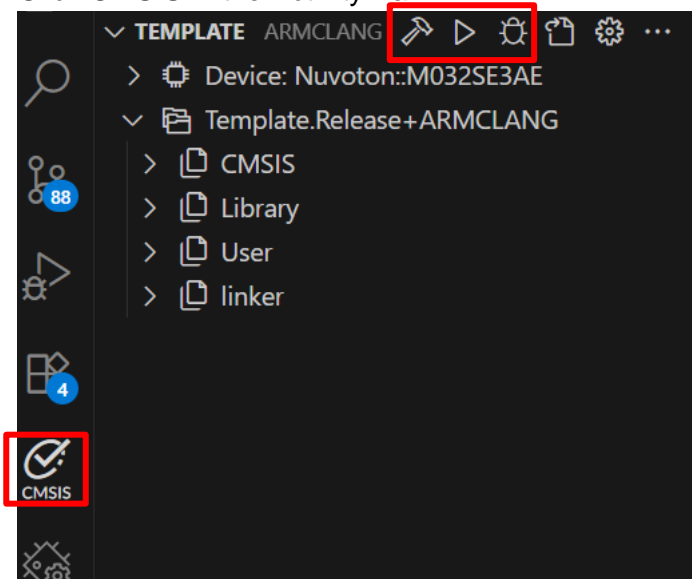


8. Text “device model number” in search bar.



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
_M031Series.o
[2/7] Building C object CMakeFiles/Group_User.dir/C:/SPCheng/Git/M031/bsp/SampleCode/Template/main.o
[3/7] Building C object CMakeFiles/Group_CMSIS.dir/C:/SPCheng/Git/M031/bsp/Library/Device/Nuvoton/M031/Source/system_M031
Series.o
[4/7] Building C object CMakeFiles/Group_Library.dir/C:/SPCheng/Git/M031/bsp/Library/StdDriver/src/retarget.o
[5/7] Building C object CMakeFiles/Group_Library.dir/C:/SPCheng/Git/M031/bsp/Library/StdDriver/src/uart.o
[6/7] Building C object CMakeFiles/Group_Library.dir/C:/SPCheng/Git/M031/bsp/Library/StdDriver/src/clock.o
[7/7] Linking C executable C:/SPCheng/Git/M031/bsp/SampleCode/Template/VSCode/out/Template/ARMCLANG/Release/Template.axf
Program Size: Code=1792 RO-data=296 RW-data=16 ZI-data=3672

+-----+
Build summary: 1 succeeded, 0 failed - Time Elapsed: 00:00:03
+-----+
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/M031/bsp/SampleCode/Template/VSCode/Template
+ARMCLANG.cbuild-run.yml

0006417 I Loading C:/SPCheng/Git/M031/bsp/SampleCode/Template/VSCode/out/Template/ARMCLANG/Release/Template.axf [load_cmd
]
[=====] 100%
0006901 I Erased 2560 bytes (5 sectors), programmed 2560 bytes (5 pages), skipped 0 bytes (0 pages) at 5.17 kB/s [loader]
[*] Terminal will be reused by tasks, press any key to close it.

```

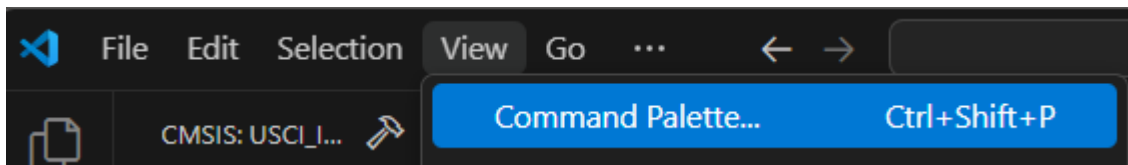
4. Click Load & Debug

The debugger stops at the main function.

```

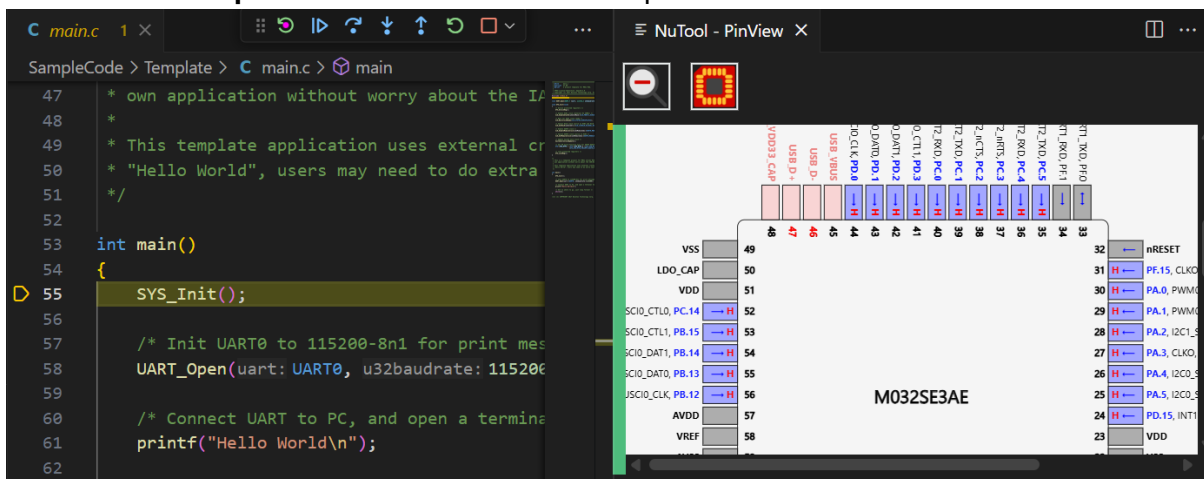
File Edit Selection View Go Run ... bsp [Administrator]
C main.c 1 x
SampleCode > Template > C main.c > main
47 * own application without worry about the IAR/Keil project settings.
48 *
49 * This template application uses external crystal as HCLK source and configures UART0 to print out
50 * "Hello World", users may need to do extra system configuration based on their system design.
51 */
52
53 int main()
54 {
55     SYS_Init();
56
57     /* Init UART0 to 115200-8n1 for print message */
58     UART_Open(uart: UART0, u32baudrate: 115200);
59
60     /* Connect UART to PC, and open a terminal tool to receive following message */
61     printf("Hello World\n");
62
63     while(1);
64 }
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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
2025.10.28	3.01	1. Initially version.

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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.

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