Installing the Keil MDK for Nuvoton Edition

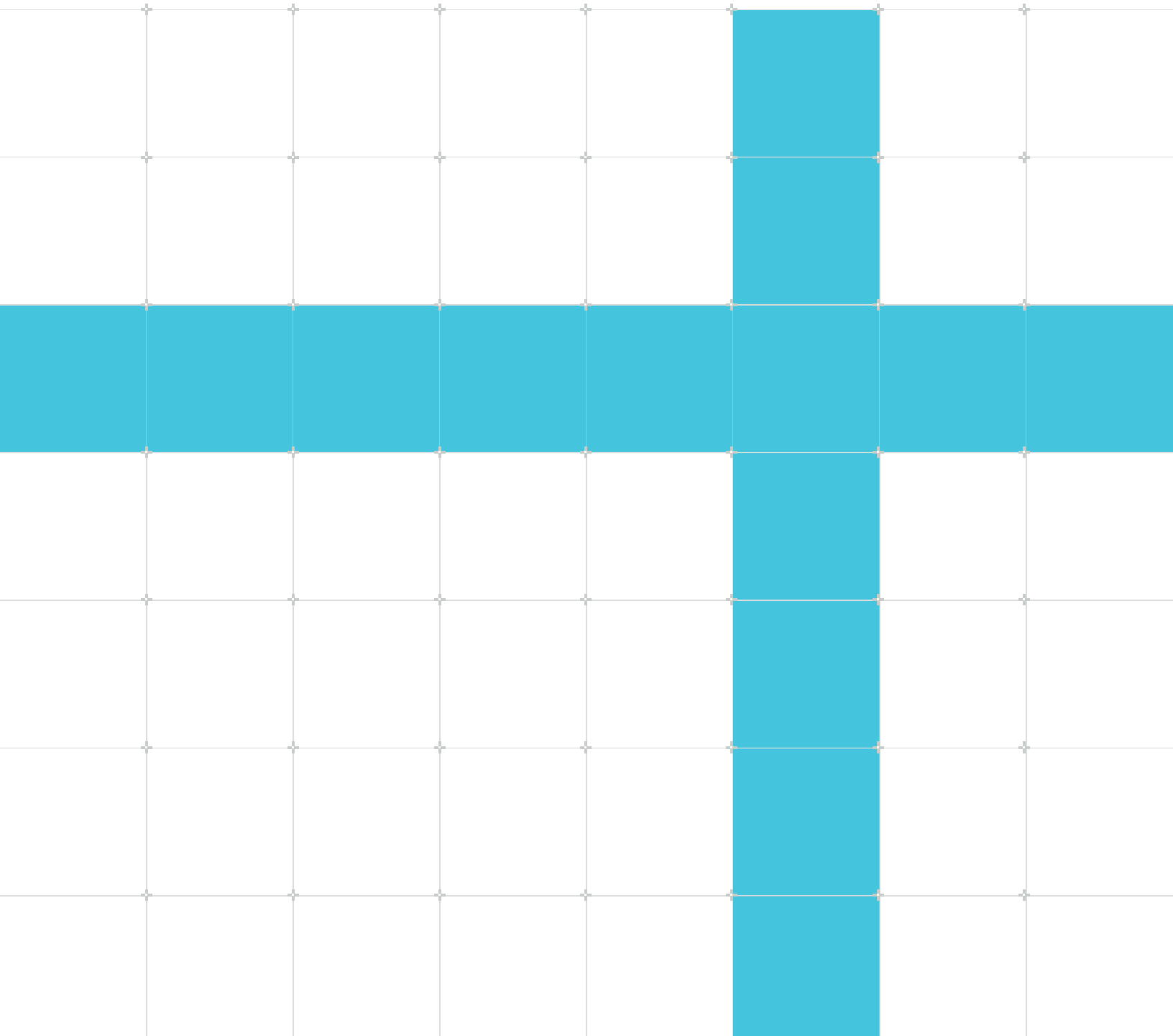
Version 1.2.1

Application Note

Non-Confidential

Issue

kan342_1.2.1_en



Installing the Keil MDK for Nuvoton Edition Application Note

This document (kan342_1.2.1_en) was issued on 2024-10-24. There might be a later issue at https://developer.arm.com/documentation/kan342

The product version is 1.2.1.

See also: Proprietary notice | Product and document information | Useful resources

Start reading

If you prefer, you can skip to the start of the content.

Intended audience

Embedded Software and Firmware Developers.

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To provide feedback on the document, fill the following survey: https://developer.arm.com/documentation-feedback-survey.

Contents

1. Abstract

Arm offers software developers working with Nuvoton devices based on the Arm Cortex-M processor cores a free-to-use professional Keil MDK v6 tool suite.

This edition includes all tools and software components delivered with Keil MDK v6.

This application note explains how to download, install, and use MDK with Nuvoton devices.

Keil MDK v6 with user-based licensing only supports Arm Compiler 6 and onwards. If you need to take care of a legacy project requiring Arm Compiler 5, please contact support for help.

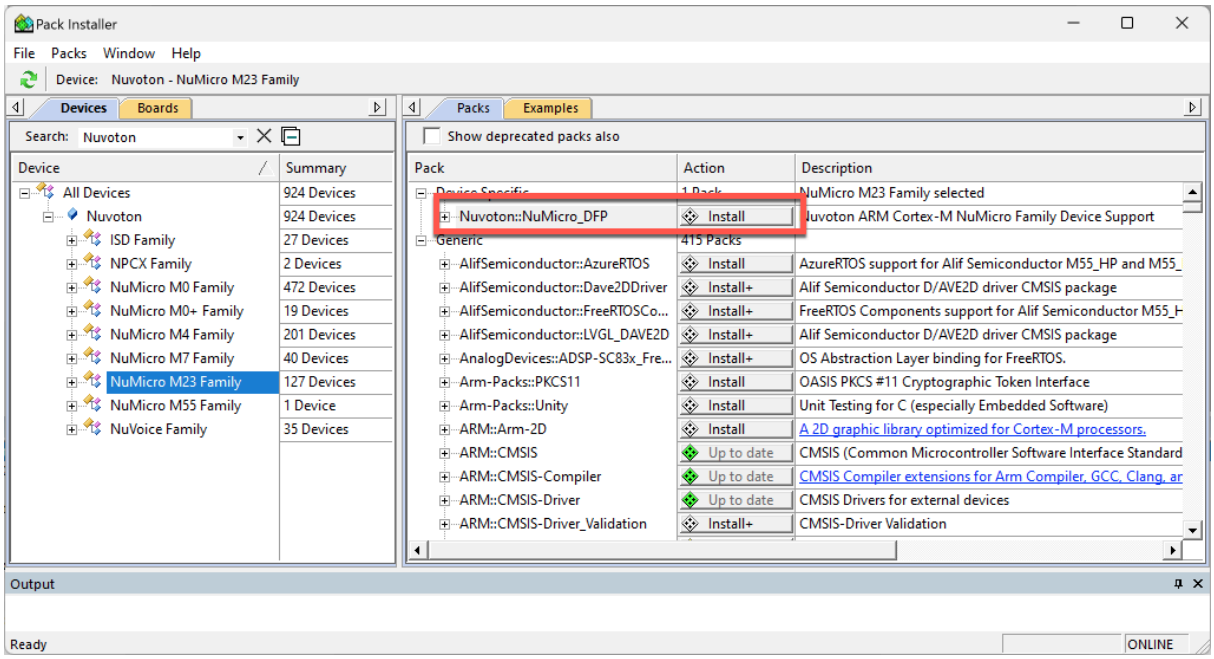
2. Installation

This chapter explains how to download and install Keil MDK on your local computer.

Keil uVision (Windows only)

1. Download the installer.
2. Run the downloaded MDK5xx.exe installer.
3. Select your installation location. If you have existing MDK installations that you want to keep, select a new folder. Once the installation has finished, Pack Installer opens.
4. In Pack Installer, click **Install** to download and install a device family pack supplied by Nuvoton.

Figure 2-1: Install Nuvoton CMSIS-Packs



Next, you need to activate your product.

Keil Studio

1. Download and install Microsoft Visual Studio Code on your computer.
2. Once installed, open the **Extensions** in the activity bar.

Figure 2-2: Open the extensions

3. Search for `Keil Studio Pack` and install the extension.

Next, you need to activate your product.

3. Activation

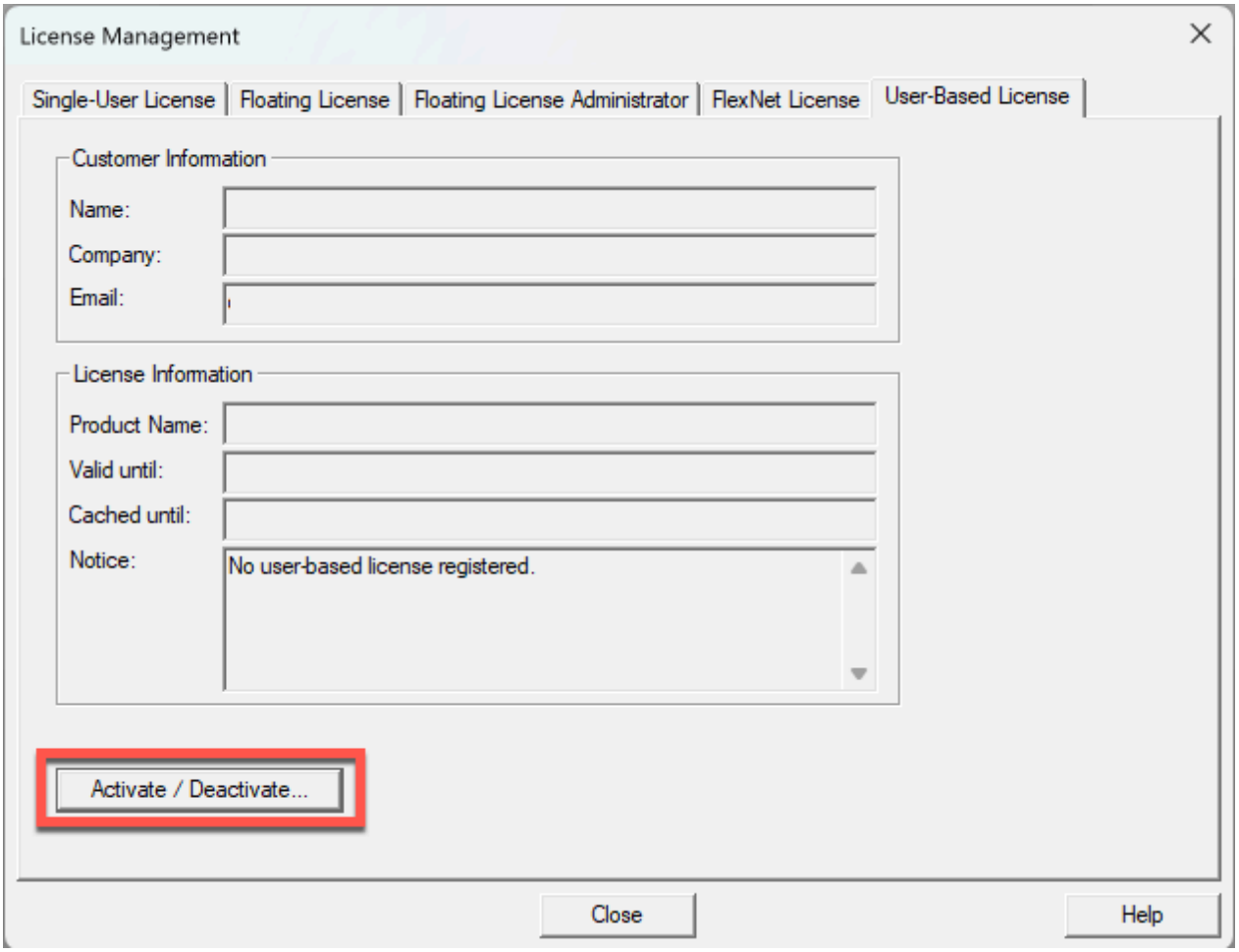
This chapter explains how to activate your product.

Keil uVision

Open uVision and go to **File — License Management...** and select the **User-Based License** tab.

Click the button **Activate / Deactivate**.

Figure 3-1: License Management - User-Based License

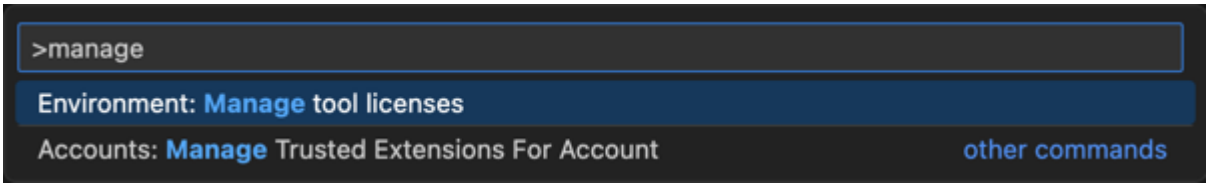


Continue in the Arm License Management Tool.

Keil Studio

Open Visual Studio Code and press Ctrl + Shift + p (Cmd + Shift + p on macOS). In the command box, enter `manage` and select **Environment: Manage tools licenses**:

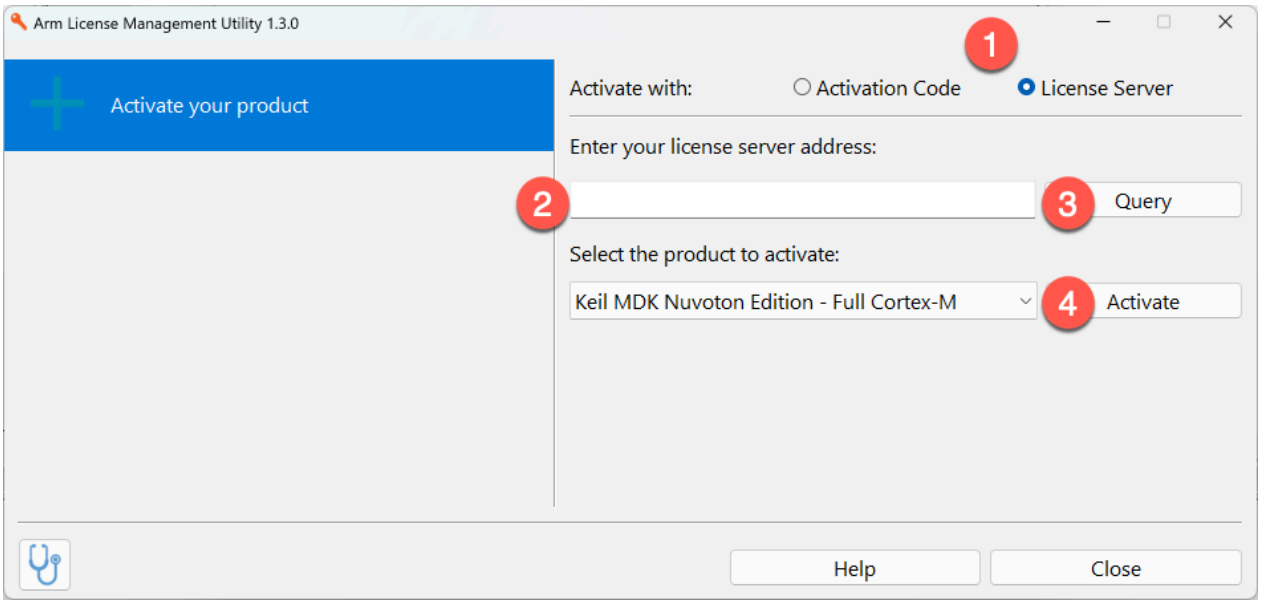
Figure 3-2: Run the manage tools licenses command



Continue in the Arm License Management Tool.

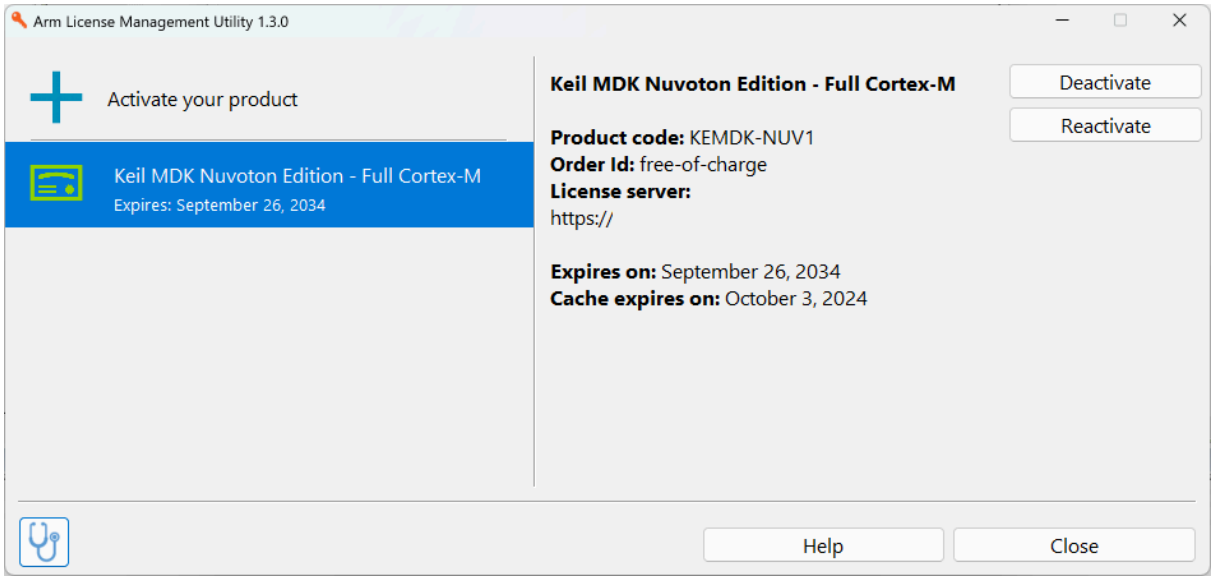
Arm License Management Tool

Figure 3-3: Arm License Management Utility



1. Enable **License Server**.
2. To get the license server address, please visit https://www.nuvoton.com/keil.
3. Click the **Query** button. Make sure that the “Keil MDK Nuvoton Edition - Full Cortex-M” is shown.
4. Click on **Activate**. The window changes and shows the information of the activated license:

Figure 3-4: Arm License Activated



Next, test your set up using an example project.

4. Example Projects

This chapter shows how to use example projects from Nuvoton to check the correct set up of the hardware and software.

4.1 Keil uVision

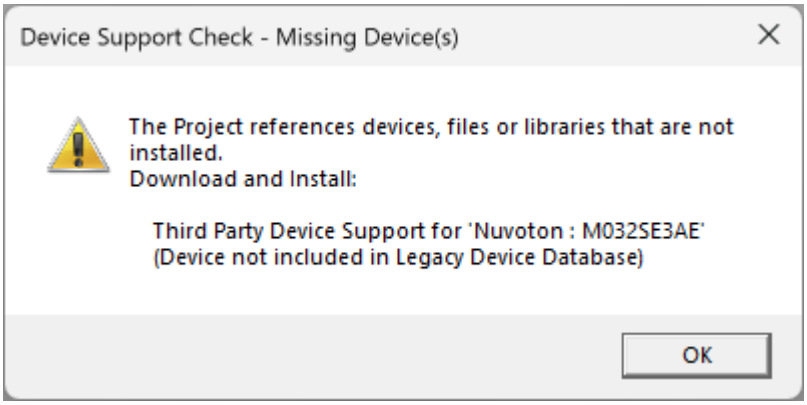
Example projects for Nuvoton are available in MDK project format.

1. Go to Nuvoton's web site.
2. Search for an appropriate series and download the ZIP file with the sample code onto your PC.
3. Unzip the file and double-click the uvproj(x) uVision project file.
4. uVision opens and loads the project.

Note

If you see a warning about "missing devices", you can safely ignore this message.

Figure 4-1: Device Support Check Warning



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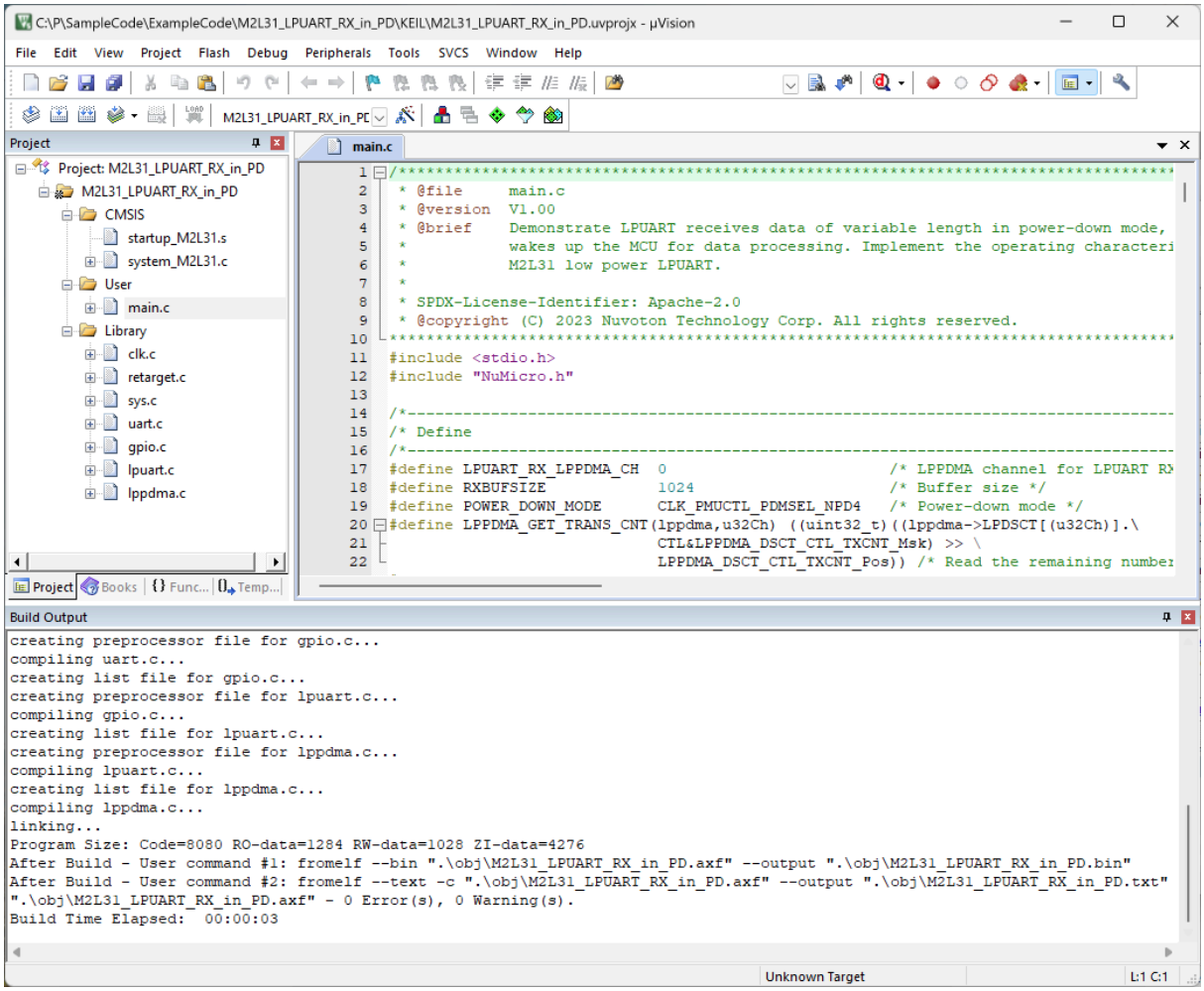
5. Build the project.

Figure 4-2: Nuvoton Arm Cortex-M23 project built successfully



4.2 Keil Studio

Keil Studio is able to use uVision projects after conversion.

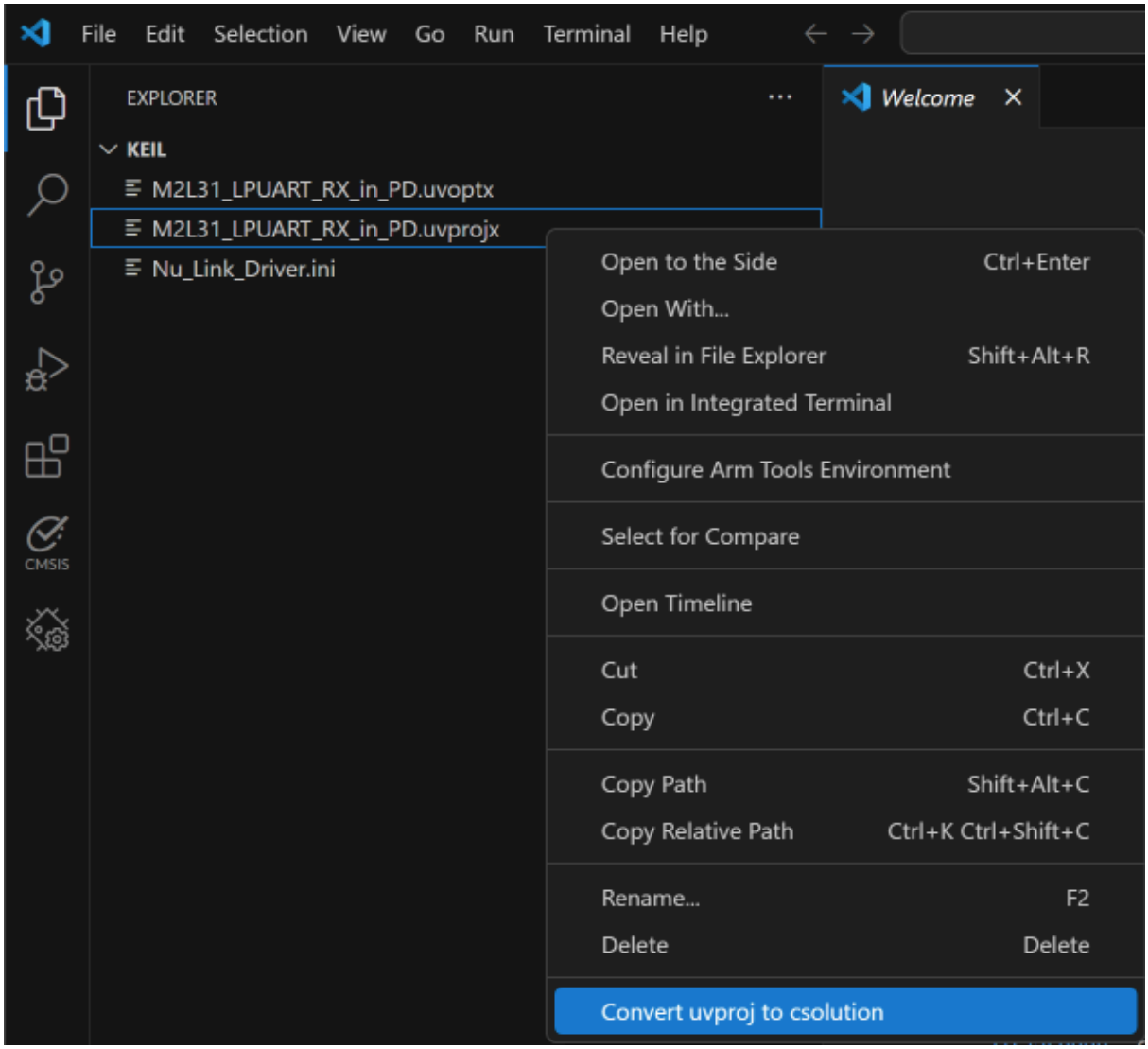
Arm Cortex-M23 and Cortex-M55 based devices

Example projects for Arm Cortex-M23 and Cortex-M55 based devices from Nuvoton are available in MDK v5 project format.

1. Go to Nuvoton's web site.
2. Search for an appropriate series and download the ZIP file with the sample code onto your PC.
3. Unzip the file.
4. Open Keil Studio and go to **File - Open Folder**.
5. Use your file manager to browse to the unzipped directory and pen the sub-folder "KEIL".

6. Right-click the uvprojx file and select **Convert uvproj to csolution**:

Figure 4-3: Convert uvprojx to csolution

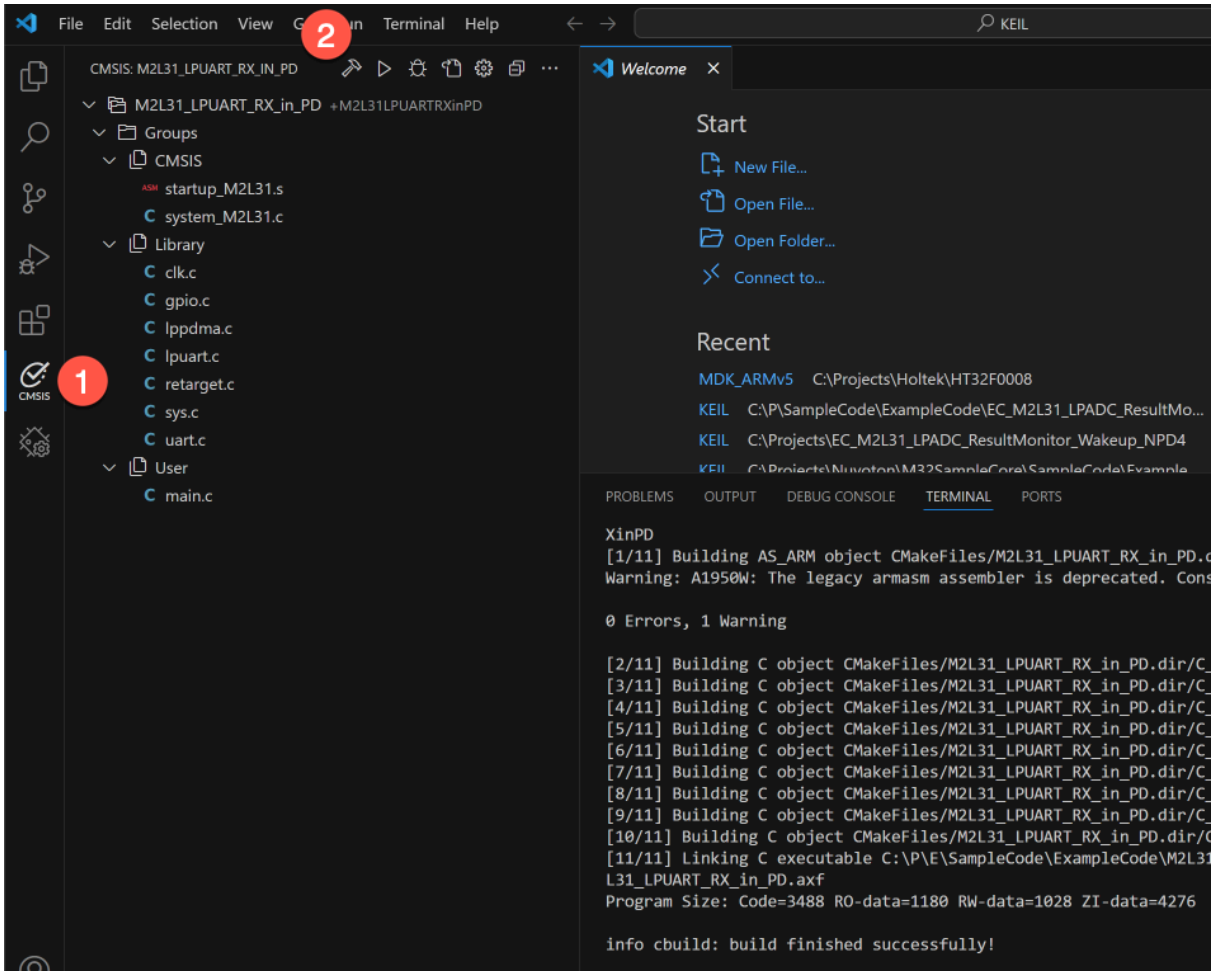


Note

You might get a warning that after build steps cannot be converted. You can ignore this message.

7. Open the CMSIS extension (1) and use the hammer icon (2) to build the project:

Figure 4-4: Build the project

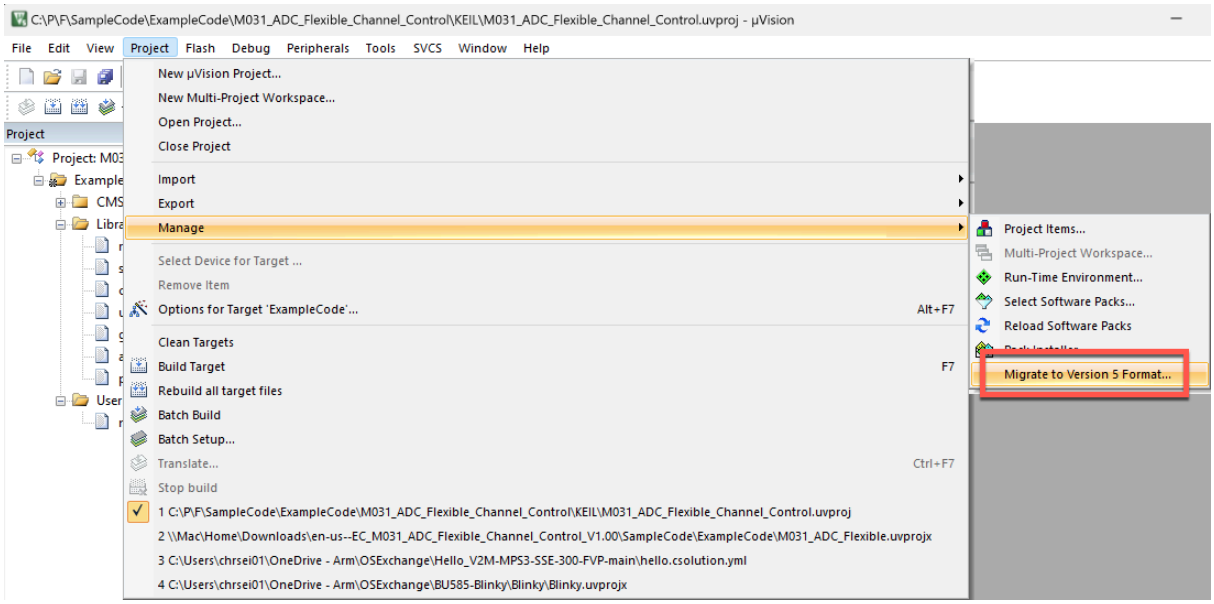


All other Cortex-M based devices

Example projects for Arm Cortex-M0/M0+/M4/M7 based devices from Nuvoton require an additional conversion step as they are shipped in the old MDK v4 project format.

1. Go to Nuvoton's web site.
2. Search for an appropriate series and download the ZIP file with the sample code onto your PC.
3. Unzip the file and double-click the uvproj uVision project file.
4. uVision opens and loads the project.
5. Go to **Project - Manage - Migrate to Version 5 Format...**

Figure 4-5: Project - Manage - Migrate to Version 5 Format...



6. Once the migration is done and the uvprojx file is generated, you can continue as described in the previous section.

Further reading

Congratulations! You can now start working on embedded software development for Nuvoton devices!

If you want to learn more about Keil MDK, download the Getting Started Guide.

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PRE-1121-V1.0

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Read the information in these sections to understand the release status of the product and documentation, and the conventions used in Arm documents.

Product status

All products and services provided by Arm require deliverables to be prepared and made available at different levels of completeness. The information in this document indicates the appropriate level of completeness for the associated deliverables.

Product completeness status

The information in this document is Final, that is for a developed product.

Revision history

These sections can help you understand how the document has changed over time.

Document release information

The Document history table gives the issue number and the released date for each released issue of this document.

Document history

Issue	Date	Confidentiality	Change
1.2.1	24 October 2024	Non-Confidential	Minor correction
1.2.0	20 September 2024	Non-Confidential	Updates for user-based licensing
1.1.0	12 January 2023	Non-Confidential	Minor corrections
1.0.0	11 January 2023	Non-Confidential	Initial release

Change history

The Change history tables describe the technical changes between released issues of this document in reverse order. Issue numbers match the revision history in Document release information on page 17.

Table 2: Issue 1.0.0

Change	Location
Initial release	-

Conventions

The following subsections describe conventions used in Arm documents.

Glossary

The Arm Glossary is a list of terms used in Arm documentation, together with definitions for those terms. The Arm Glossary does not contain terms that are industry standard unless the Arm meaning differs from the generally accepted meaning.

See the Arm Glossary for more information: developer.arm.com/glossary.

Typographic conventions

Arm documentation uses typographical conventions to convey specific meaning.

Convention	Use
italic	Citations.
bold	Interface elements, such as menu names. Terms in descriptive lists, where appropriate.
`monospace`	Text that you can enter at the keyboard, such as commands, file and program names, and source code.
`monospace underline`	A permitted abbreviation for a command or option. You can enter the underlined text instead of the full command or option name.
`<and>`	Encloses replaceable terms for assembler syntax where they appear in code or code fragments. For example: `MRC p15, 0, <Rd>, <CRn>, <CRm>, <Opcode_2>`
SMALL CAPITALS	Terms that have specific technical meanings as defined in the *Arm® Glossary*. For example, **IMPLEMENTATION DEFINED**, **IMPLEMENTATION SPECIFIC**, **UNKNOWN**, and **UNPREDICTABLE**.

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Your system requires the following. If you do not follow these requirements your system will not work.

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This information is important and needs your attention.

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