



# Installing the Keil MDK for Nuvoton Edition

Version 1.1

## Application Note

### Non-Confidential

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### Issue

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### Release information

#### Document history

Issue	Date	Confidentiality	Change
1.0	11 January 2023	Non-Confidential	Initial release

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# 1. Introduction

## 1.1 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](https://developer.arm.com/glossary).

### Typographic conventions

Arm documentation uses typographical conventions to convey specific meaning.

Convention	Use
<i>italic</i>	Citations.
<b>bold</b>	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 <u>underline</u>	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:  <pre>MRC p15, 0, &lt;Rd&gt;, &lt;CRn&gt;, &lt;CRm&gt;, &lt;Opcode_2&gt;</pre>
<b>SMALL CAPITALS</b>	Terms that have specific technical meanings as defined in the <i>Arm® Glossary</i> . For example, <b>IMPLEMENTATION DEFINED</b> , <b>IMPLEMENTATION SPECIFIC</b> , <b>UNKNOWN</b> , and <b>UNPREDICTABLE</b> .
 Caution	Recommendations. Not following these recommendations might lead to system failure or damage.
 Warning	Requirements for the system. Not following these requirements might result in system failure or damage.
 Danger	Requirements for the system. Not following these requirements will result in system failure or damage.
 Note	An important piece of information that needs your attention.

Convention	Use
 Tip	A useful tip that might make it easier, better or faster to perform a task.
 Remember	A reminder of something important that relates to the information you are reading.

## 1.2 Useful resources

This document contains information that is specific to this product. See the following resources for other useful information.

Access to Arm documents depends on their confidentiality:

- Non-Confidential documents are available at [developer.arm.com/documentation](https://developer.arm.com/documentation). Each document link in the following tables goes to the online version of the document.
- Confidential documents are available to licensees only through the product package.



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Adobe PDF reader products can be downloaded at <http://www.adobe.com>

## 1.3 Other information

See the Arm website for other relevant information.

- [Arm® Developer](#).
- [Arm® Documentation](#).
- [Technical Support](#).
- [Arm® Glossary](#).

## 2. Abstract

Arm provides software developers working with Nuvoton devices based on the Arm Cortex-M0/M0+/M23 processors with a free-to-use professional tool suite for commercial use. The free Keil MDK Nuvoton Edition – Cortex-M0/M0+/M23 includes the Arm C/C++ Compiler, the Keil RTX5 real-time operating system kernel, and the  $\mu$ Vision IDE and debugger.

If you wish to program all Nuvoton's Arm Cortex-M based devices, [purchase the Keil MDK Nuvoton Edition online](#).

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

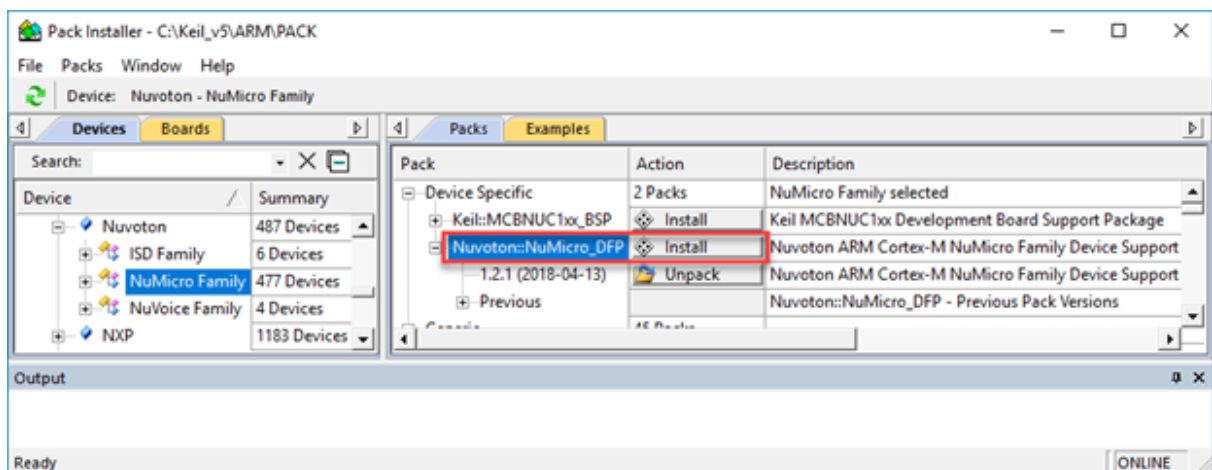


## 3. Installation

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

1. [Download](#) Keil MDK.
2. Run the downloaded MDK5xx.exe installer.
3. Select your installation location (default is c:\Keil\_v5). 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 the device family packs supplied by Nuvoton.

**Figure 3-1: Install Nuvoton CMSIS-Packs**



Next, you need to [get a valid license](#) for your product.

## 4. License

This chapter explains how to obtain a valid License ID Code (LIC) or Product Serial Number (PSN).

### Free Cortex-M0/M0+/M23 Edition

Visit the [Nuvoton registration page](#) to receive a valid license for the Cortex-M0/M0+/M23 edition. Once you have the email with the license, go to the [Activation](#) step.

### Full Cortex-M Edition

To activate the full Keil MDK Nuvoton Edition (for all Cortex-M based devices), visit Arm's [online store and buy the extended Nuvoton edition](#). You will receive a PSN that you convert to a LIC in the [Activation](#) step.




Both licenses are one-year term.

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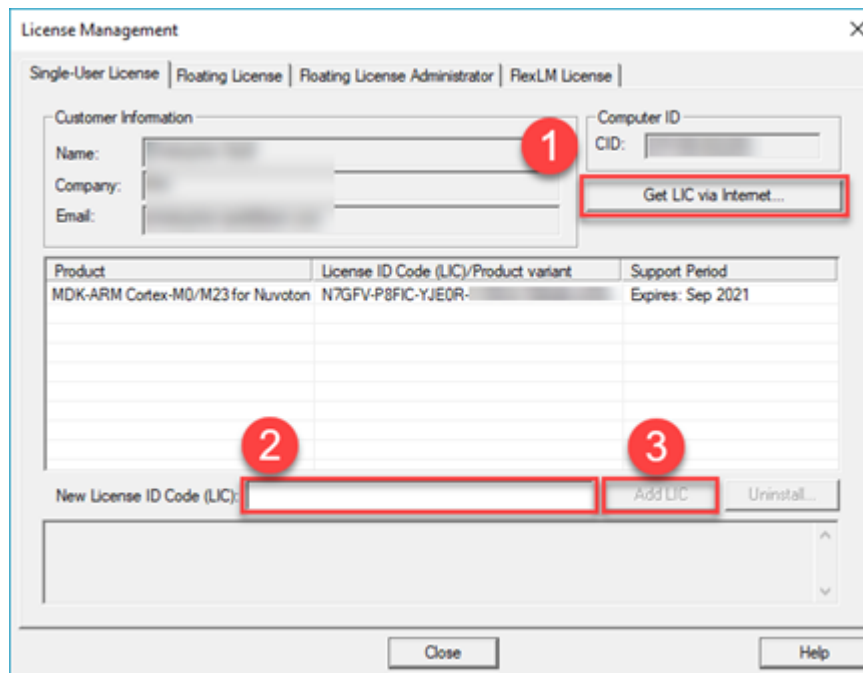
Next, [activate](#) your product.

## 5. Activation

This chapter explains how to activate your product. If you have received a LIC, you can do that immediately. If you have received a PSN, you need to convert it to a LIC first.

- On your PC, login with an account that has administration rights.
- Right-click the  $\mu$ Vision icon  and select “Run as Administrator...” from the context menu.
- Go to “File – License Management...” and select the “Single-User License” tab.

**Figure 5-1: License Management - Single User**



Product	License ID Code (LIC)/Product variant	Support Period
MDK-ARM Cortex-M0/M23 for Nuvoton	N7GFV-P8FIC-YJE0R	Expires: Sep 2021

1. (Optional) Click the button “Get LIC via Internet...”, then click the button “OK” to register the product. This action opens the License Management page on the Keil web site. For the extended edition, enter the PSN that you have received via email after purchase. Also, add your contact information and click the button “Submit”. An e-mail is sent back with the License ID Code (LIC) within a few minutes. If you have already a LIC from the Nuvoton registration page, you can skip this step.
2. To activate the product, enter the “LIC” in the field “New License ID Code (LIC)”.
3. Click “Add LIC”.

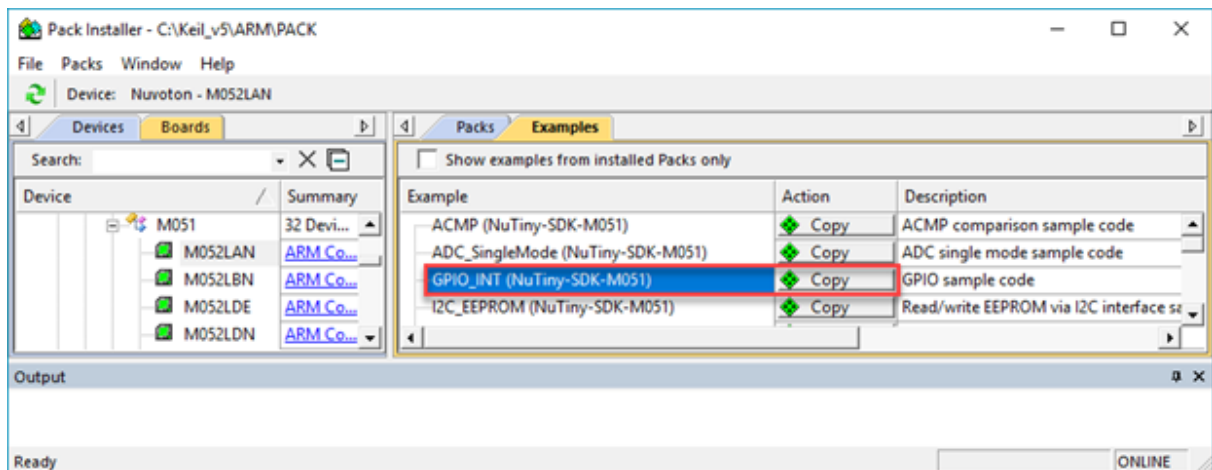
Next, test your set up using an [example project](#).

## 6. Example Projects

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

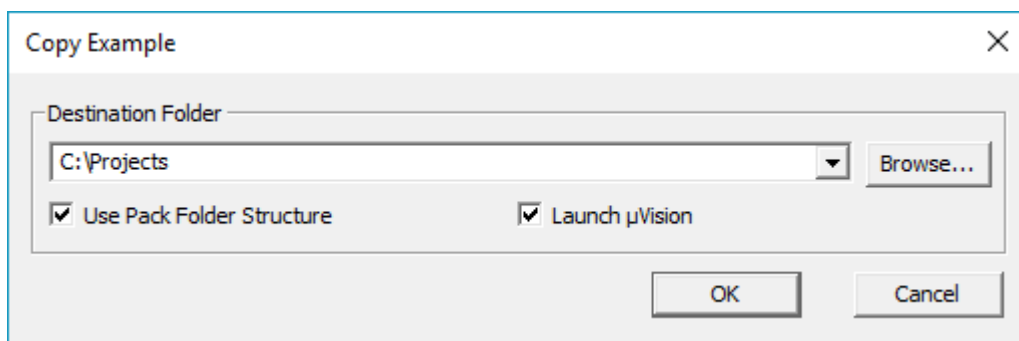
1. Open the Pack Installer from the  $\mu$ Vision toolbar.
2. Switch to the “Examples” tab. From the list, select the example you want to install. The “Devices” tab allows to filter for specific devices or device series.

**Figure 6-1: Find an example project**



3. When pressing “Copy”, a dialog box will ask for the desired destination. The example will be directly installed into this folder. Folders that do not exist will be created automatically.

**Figure 6-2: Copy an example project**



4. Tick “Launch  $\mu$ Vision” to open the project immediately.

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

### Further reading

If you want to get started with Keil MDK, download the [Getting Started Guide](#).

