

## 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.

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## License

To activate one of the editions, you need a valid License ID Code (LIC).

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

Go to <https://www.nuvoton.com/tool-and-software/ide-and-compiler/get-keil-mdk-lic/> to receive a valid license for the Cortex-M0/M0+/M23 edition. Once you have the email with the license, go to the **second** step in the Activation paragraph below.

### **Full Cortex-M Edition**

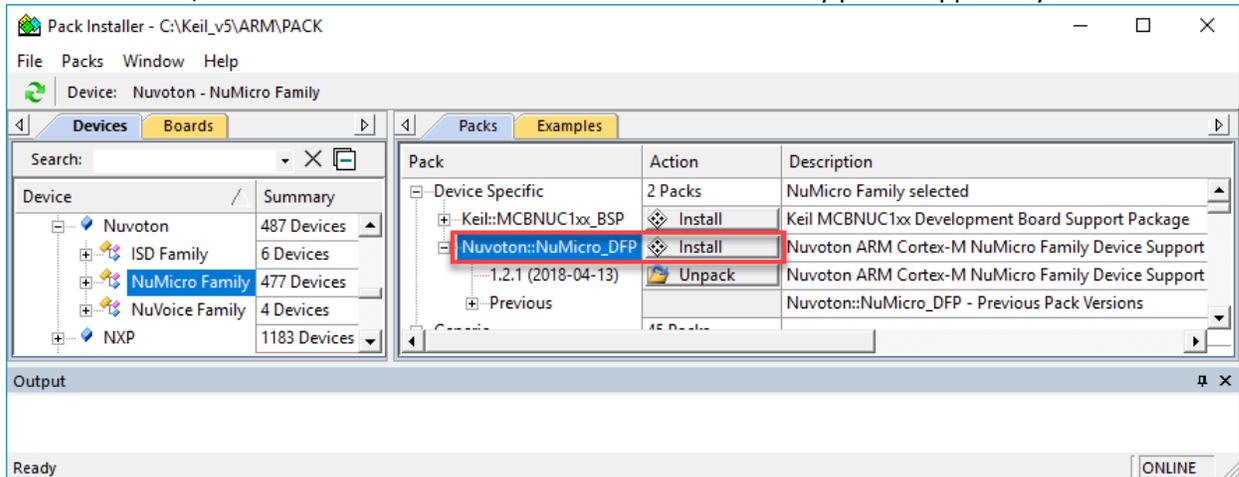
To activate the full Keil MDK Nuvoton Edition (for all Cortex-M based devices), visit Arm's [online store and buy the extended Nuvoton edition](#). You will receive a PSN that you can use in the Activation step.

#### Note

- Both licenses are one-year term.

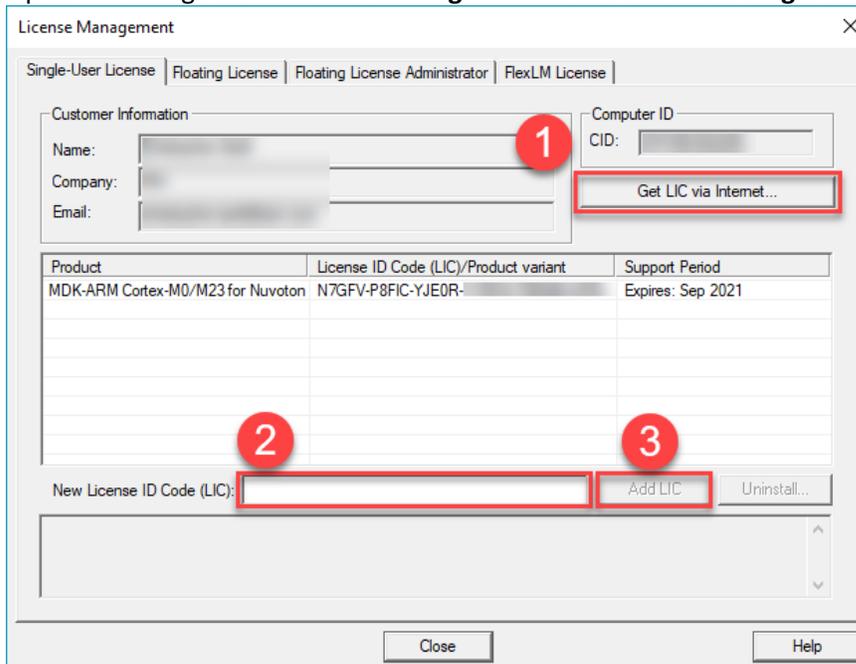
## Installation

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.



## Activation

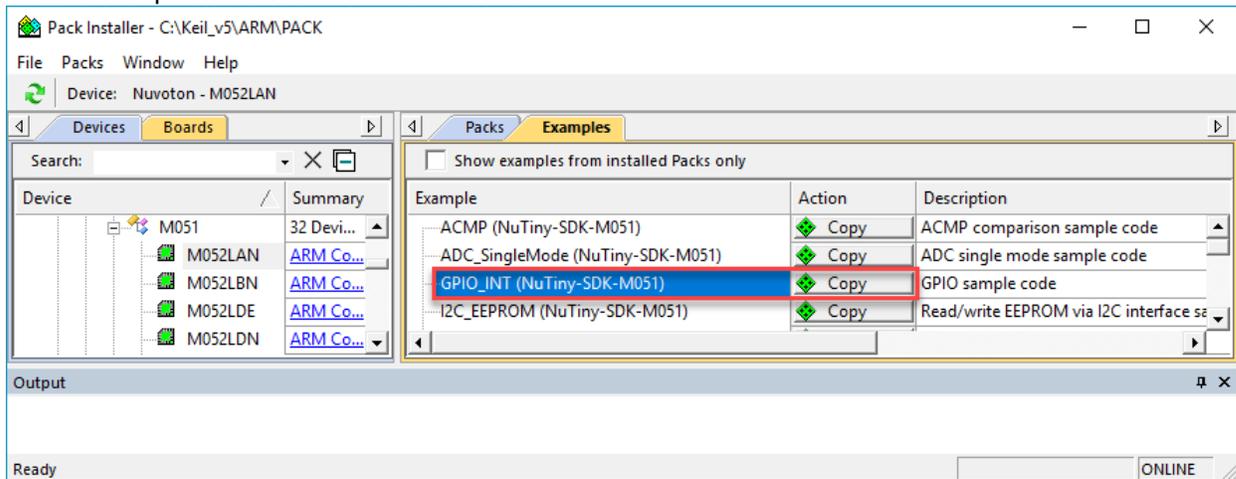
- On your PC, login with an account that has administration rights.
- Right-click the  $\mu$ Vision icon  and select **Run as Administrator...** from the context menu.
- Open the dialog **File — License Management...** and select the **Single-User License** tab.



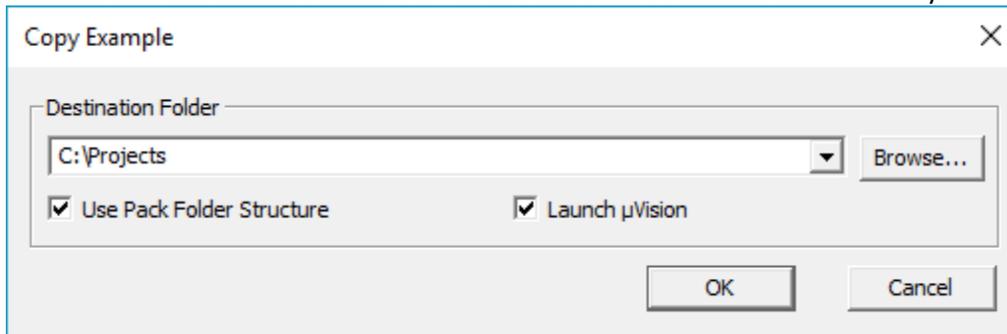
1. Click the button **Get LIC via Internet...**, then click the button **OK** to register the product. This action opens the License Management page on the Keil web site. For the extended edition, enter the PSN that you have received via email after purchase. Also, add your contact information and click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

## Example projects

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.



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.



4. Tick **Launch  $\mu$ Vision** to open the project after installation.