



Installing the Keil MDK for STMicroelectronics Edition

Version 1.1

Application Note

Non-Confidential

Copyright © 2023 Arm Limited (or its affiliates).
All rights reserved.

Issue

kan344_1.1_en



Installing the Keil MDK for STMicroelectronics Edition

Application Note

Copyright © 2023 Arm Limited (or its affiliates). All rights reserved.

Release information

Document history

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

Proprietary Notice

This document is protected by copyright and other related rights and the practice or implementation of the information contained in this document may be protected by one or more patents or pending patent applications. No part of this document may be reproduced in any form by any means without the express prior written permission of Arm. No license, express or implied, by estoppel or otherwise to any intellectual property rights is granted by this document unless specifically stated.

Your access to the information in this document is conditional upon your acceptance that you will not use or permit others to use the information for the purposes of determining whether implementations infringe any third party patents.

THIS DOCUMENT IS PROVIDED "AS IS". ARM PROVIDES NO REPRESENTATIONS AND NO WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY, SATISFACTORY QUALITY, NON-INFRINGEMENT OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE DOCUMENT. For the avoidance of doubt, Arm makes no representation with respect to, and has undertaken no analysis to identify or understand the scope and content of, patents, copyrights, trade secrets, or other rights.

This document may include technical inaccuracies or typographical errors.

TO THE EXTENT NOT PROHIBITED BY LAW, IN NO EVENT WILL ARM BE LIABLE FOR ANY DAMAGES, INCLUDING WITHOUT LIMITATION ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF ANY USE OF THIS DOCUMENT, EVEN IF ARM HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

This document consists solely of commercial items. You shall be responsible for ensuring that any use, duplication or disclosure of this document complies fully with any relevant export laws

and regulations to assure that this document or any portion thereof is not exported, directly or indirectly, in violation of such export laws. Use of the word “partner” in reference to Arm’s customers is not intended to create or refer to any partnership relationship with any other company. Arm may make changes to this document at any time and without notice.

This document may be translated into other languages for convenience, and you agree that if there is any conflict between the English version of this document and any translation, the terms of the English version of the Agreement shall prevail.

The Arm corporate logo and words marked with ® or ™ are registered trademarks or trademarks of Arm Limited (or its affiliates) in the US and/or elsewhere. All rights reserved. Other brands and names mentioned in this document may be the trademarks of their respective owners. Please follow Arm’s trademark usage guidelines at <https://www.arm.com/company/policies/trademarks>.

Copyright © 2023 Arm Limited (or its affiliates). All rights reserved.

Arm Limited. Company 02557590 registered in England.

110 Fulbourn Road, Cambridge, England CB1 9NJ.

(LES-PRE-20349|version 21.0)

Confidentiality Status

This document is Non-Confidential. The right to use, copy and disclose this document may be subject to license restrictions in accordance with the terms of the agreement entered into by Arm and the party that Arm delivered this document to.

Unrestricted Access is an Arm internal classification.

Product Status

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

Feedback

Arm® welcomes feedback on this product and its documentation. To provide feedback on the product, create a ticket on <https://support.developer.arm.com>

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

Inclusive language commitment

Arm values inclusive communities. Arm recognizes that we and our industry have used language that can be offensive. Arm strives to lead the industry and create change.

We believe that this document contains no offensive language. To report offensive language in this document, email terms@arm.com.

Contents

1. Introduction.....	6
1.1 Conventions.....	6
1.2 Useful resources.....	7
1.3 Other information.....	7
2. Abstract.....	8
3. Installation.....	9
4. License.....	10
5. Activation.....	11
6. Example Projects.....	12

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.

Typographic conventions

Arm documentation uses typographical conventions to convey specific meaning.

Convention	Use
<i>italic</i>	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 <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, <Rd>, <CRn>, <CRm>, <Opcode_2></pre>
SMALL CAPITALS	Terms that have specific technical meanings as defined in the <i>Arm® Glossary</i> . For example, IMPLEMENTATION DEFINED , IMPLEMENTATION SPECIFIC , UNKNOWN , and UNPREDICTABLE .
 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. 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.



Arm tests its PDFs only in Adobe Acrobat and Acrobat Reader. Arm cannot guarantee the quality of its documents when used with any other PDF reader.

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 offers software developers working with STMicroelectronics devices a free-to-use tool suite. It only works with STMicroelectronics devices based on the Arm Cortex-M0/M0+ cores.

This specific Keil MDK edition is available for these device families:

- STM32C0
- STM32F0
- STM32G0
- STM32L0
- BlueNRG-1
- BlueNRG-2
- BlueNRG-LP
- BlueNRG-LPS

Figure 2-1: Keil MDK is made for STM32



This edition includes the Arm C/C++ Compiler, the μ Vision IDE and debugger, as well as the Keil RTX5 real-time operating system. Keil MDK uses STM32CubeMX to configure peripherals and other device settings.

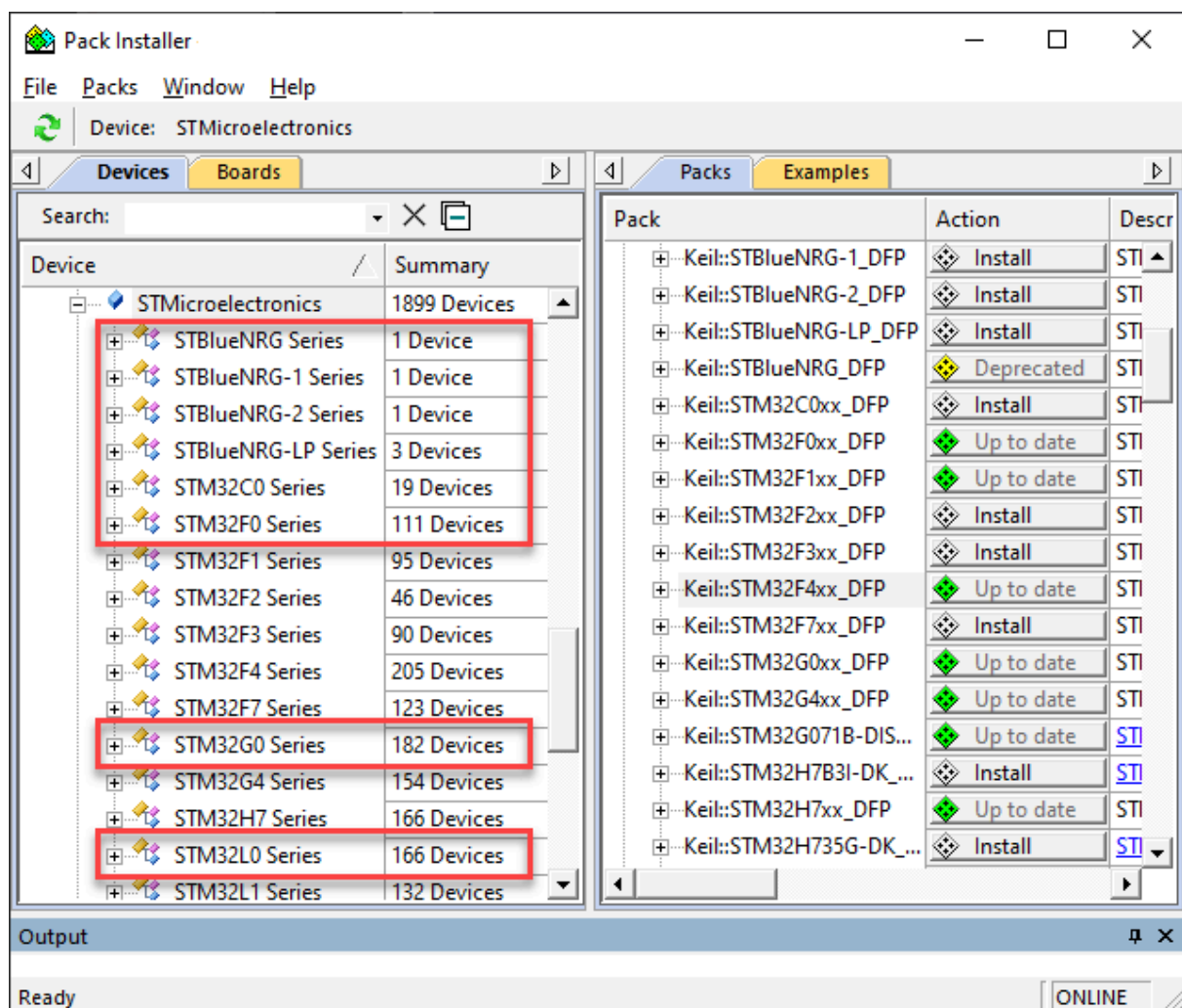
This application note explains how to download, install, and use MDK with STMicroelectronics devices based on the Cortex-M0/M0+ cores.

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 STMicroelectronics.

Figure 3-1: Install STMicroelectronics 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).

To activate the Keil MDK for STM32C0/F0/G0/L0 and BlueNRG-1/2/LP/LPS edition, use the following Product Serial Number (PSN):

4RMW3-A8FIW-TUBLG



Note

With this PSN you can cut a one-year term license.

Next, [activate](#) your product.

5. Activation

This chapter explains how to activate your product.


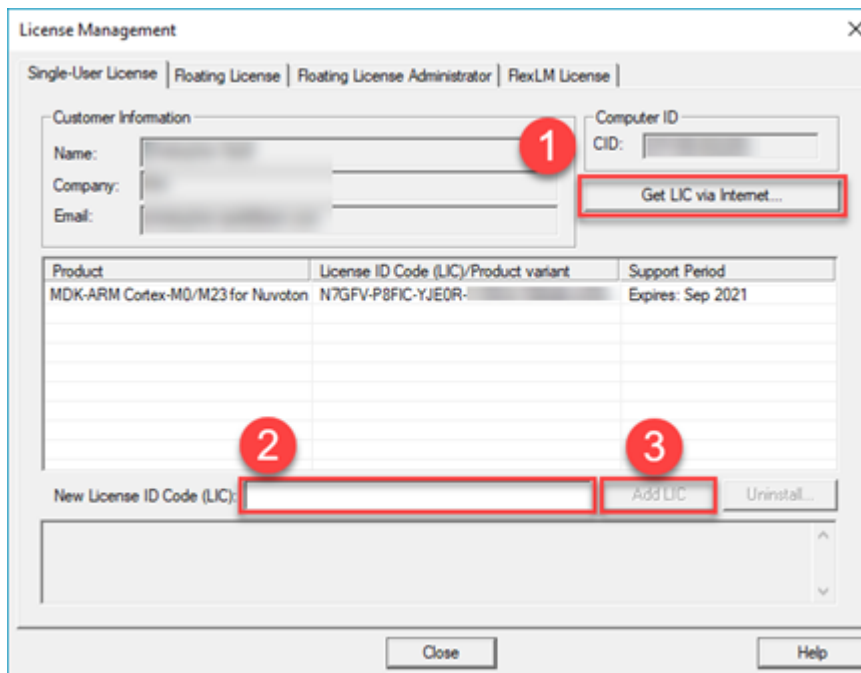
- On your PC, login with an account that has administration rights.
- Right-click the μ Vision icon  and select “Run as Administrator...” from the context menu.
- Go to “File – License Management...” and select the “Single-User License” tab.

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. 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. Enter the PSN from the [License](#) chapter. Add your contact information and press the “Submit” button. 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)”.
3. Click “Add LIC”.

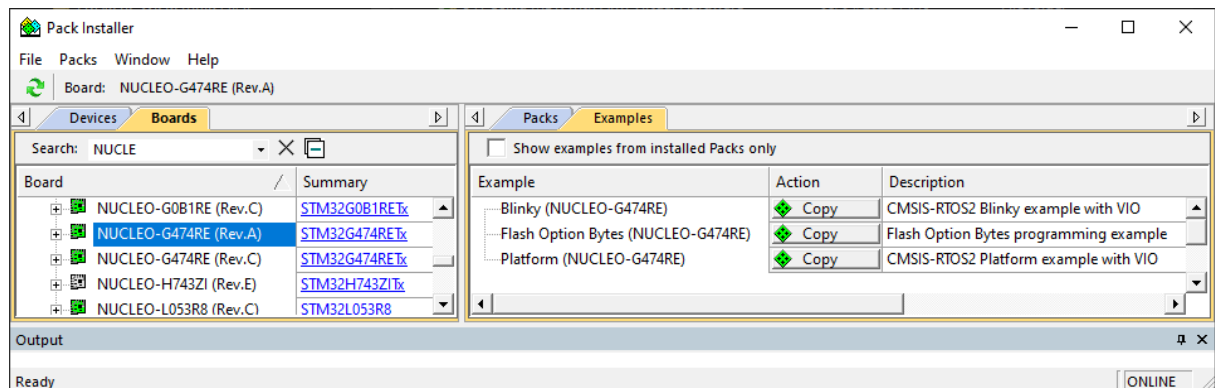
Next, test your set up using an [example project](#).

6. Example Projects

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

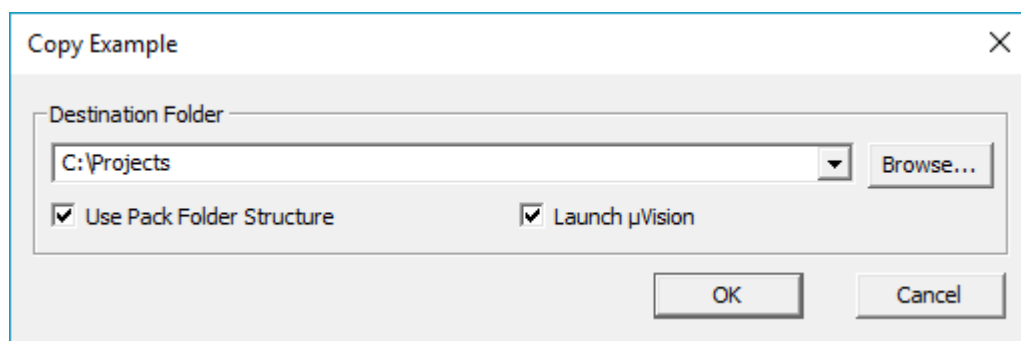
1. Open the Pack Installer from the μ Vision toolbar.
2. Switch to the “Examples” tab. From the list, select the example you want to install. The “Devices” tab allows to filter for specific devices or device series.

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 μ Vision” to open the project immediately.

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

Further reading

- If you want to learn more about Keil MDK, download the [Getting Started Guide](#).
- Learn how to [create projects with Keil MDK and STM32CubeMX](#).