

# **S32K SDK ISELED RTM 3.0.0 Driver Installation Guide**



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# 1. Introduction

This user guide describes in detail the steps to install the necessary components to build the customer application using the NXP S32K SDK ISELED RTM 3.0.0 driver.

The S32 Software Development Kit (S32 SDK) is part of the S32 Design Studio (S32DS), representing the tool suite for developing of user applications for NXP Automotive and Ultra-Reliable microcontrollers. S32K SDK ISELED driver is not integrated as part of standard S32SDK installation, thus a few steps need to be done to download and integrate the S32SDK ISELED driver into the application.

The 3 software packages that need to be installed are: S32 Design Studio, S32 SDK and SDK ISELED Driver.

## 2. Downloading the S32 Design Studio IDE

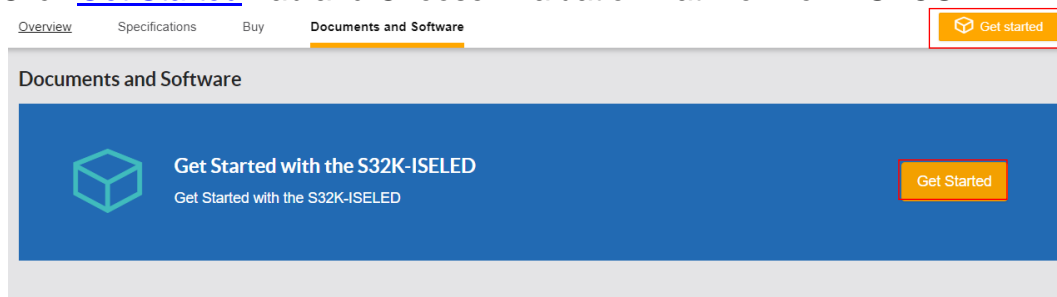
The S32 Design Studio IDE is a complimentary integrated development environment for Automotive and Ultra-Reliable Arm based MCUs that enables editing, compiling and debugging of applications. Based on, open-source software including Eclipse IDE, GNU Compiler Collection (GCC) and GNU Debugger (GDB), the S32 Design Studio IDE offers designers a straightforward development tool with no code-size limitations. NXP software, along with the S32 Design Studio IDE provide a comprehensive enablement environment that reduces development time.

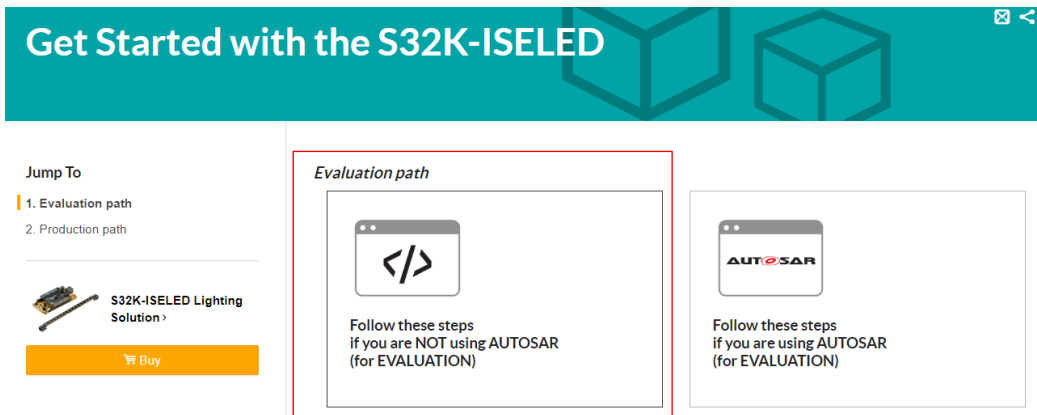
### NOTE

Despite this document might refer to particular revision of NXP SW, it is highly recommended to use the latest available versions of the SW. Those versions might not be listed in the screenshots presented in this document at the time of creation.

In order to download the S32 Design Studio IDE, please follow these steps:

1. Visit the [www.nxp.com/S32K-ISELED](http://www.nxp.com/S32K-ISELED)
2. Click [Get Started](#) Tab and Choose Evaluation Path for Non-AUTOSAR



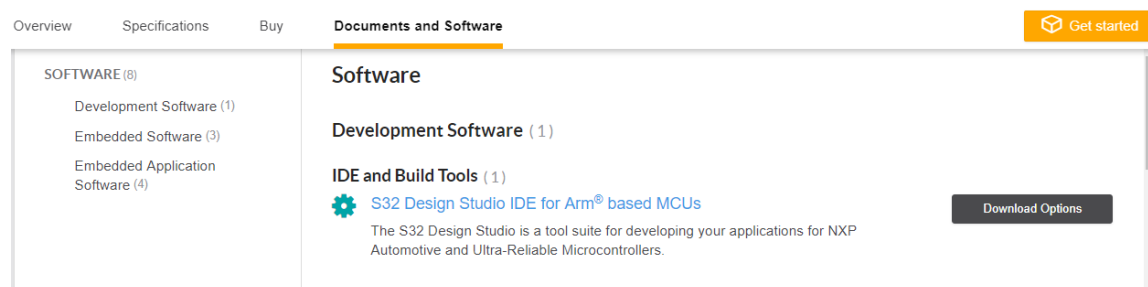


3. Download Design Studio for ARM 2018.R1 (or newer) for ARM® based MCUs:
2. Download the S32 SDK ISELED driver Installation Guide

The step-by-step guide to integrate the S32 SDK ISELED driver into the S32 Design Studio.

 [Download S32 SDK ISELED driver Installation Guide](#)

Alternatively, download link could also be found via [www.nxp.com/S32K-ISELED](http://www.nxp.com/S32K-ISELED) Documents and Software Tab.



4. To proceed with the download, the user needs to be logged-in using the user account. In case of new user, please proceed with the Register Now option prior logging into the NXP web page.

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- Download the installation package of S32 Design Studio by selecting appropriate version, based on the operation system on your PC. After download, follow the instruction of the Installation shield to proceed.

**Product Download**

**S32 Design Studio for ARM v2018 R1**

Files License Keys Notes

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	File Description	File Size	File Name
<input type="checkbox"/>	S32 Design Studio for ARM 2018 R1 - Linux	1 GB	<a href="#">S32DS_ARM_Linux_v2018_R1.bin</a>
<input type="checkbox"/>	S32 Design Studio for ARM 2018 R1 - Windows	1.9 GB	<a href="#">S32DS_ARM_Win32_v2018_R1_e160326.exe</a>

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- During the installation of the S32 Design Studio IDE, an Activation code and the license file need to be stored on your computer.



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<input type="checkbox"/>	+	S32 Design Studio for ARM 2018.R1 – Windows	1.9 GB	<a href="#">S32DS_ARM_Win32_v2018.R1_b180326.exe</a>

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## License Information

### S32 Design Studio for ARM v2018 R1

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Item Description

S32 Design Studio for ARM v2018

Order Number

S32-DS-ARM\_v2018\_66796877

Purchase Order Number

Total Number of Licenses:

100

Activation Code

License Applicable to Product(s):

Version

Description

2018

S32 Design Studio for ARM v2018 R1 (View EULA)

99 Available

License Quantity: 1

Fulfillment ID: 151642217

Expiration Date: Feb 7, 2022

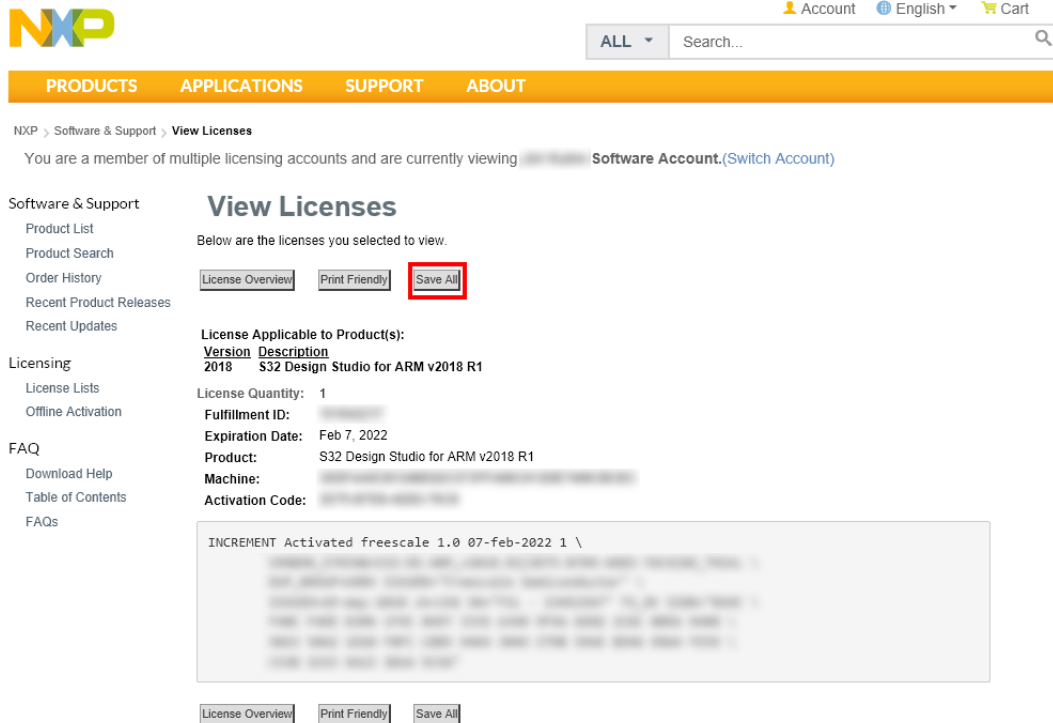
Product: S32 Design Studio for ARM v2018 R1

Machine:

Activation Code:

☒

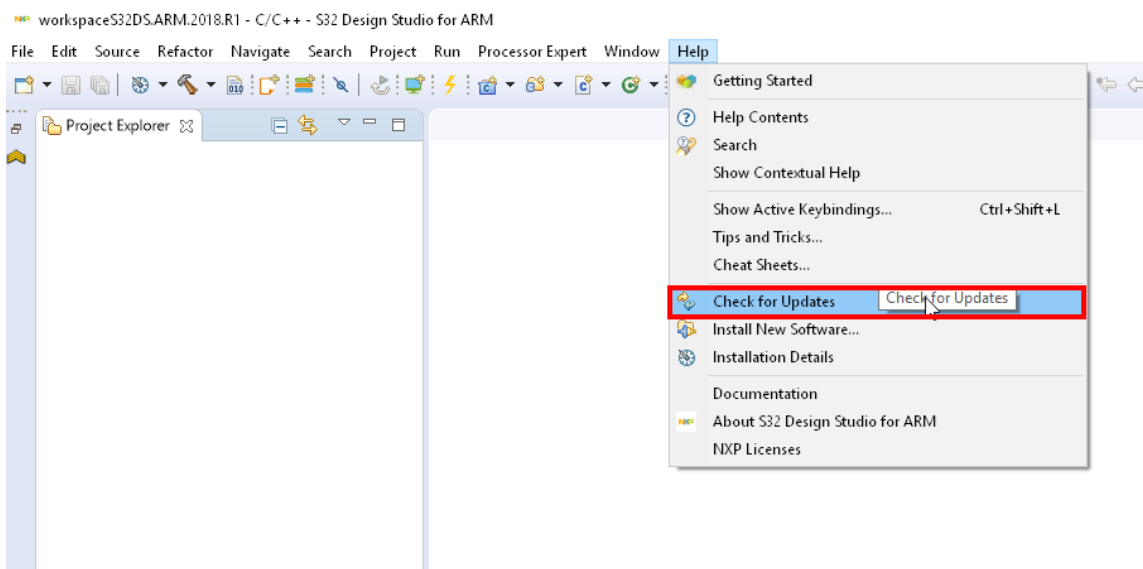
[View](#)



After successfully installing S32 Design Studio it's necessary to update the S32 Software Development Kit (S32SDK), which comes pre-installed with the S32 Design Studio. To proceed, please follow the instructions in next chapter.

## NOTE

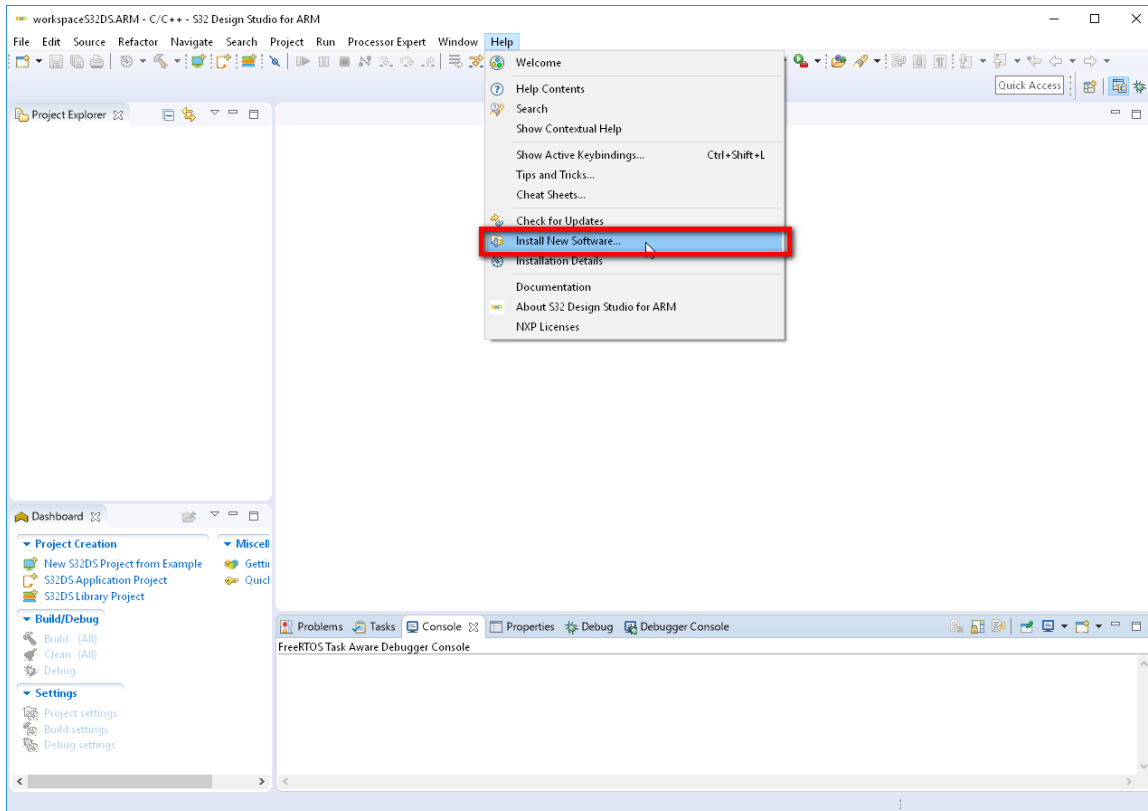
If you already have the S32 Design Studio installed on your computer, please make sure you update your installation, prior proceeding to next chapter.



### 3. Updating the S32 Software Development Kit

The S32 Software Development Kit (S32 SDK) is an extensive suite of robust hardware interface and hardware abstraction layers, peripheral drivers, RTOS, stacks, and middleware designed to simplify and accelerate application development on NXP S32K microcontrollers. As the S32K SDK ISELED driver was tested with S32K SDK revision RTM 3.0.0, the following steps need to be proceed in order to update to S32K SDK, revision RTM 3.0.0:

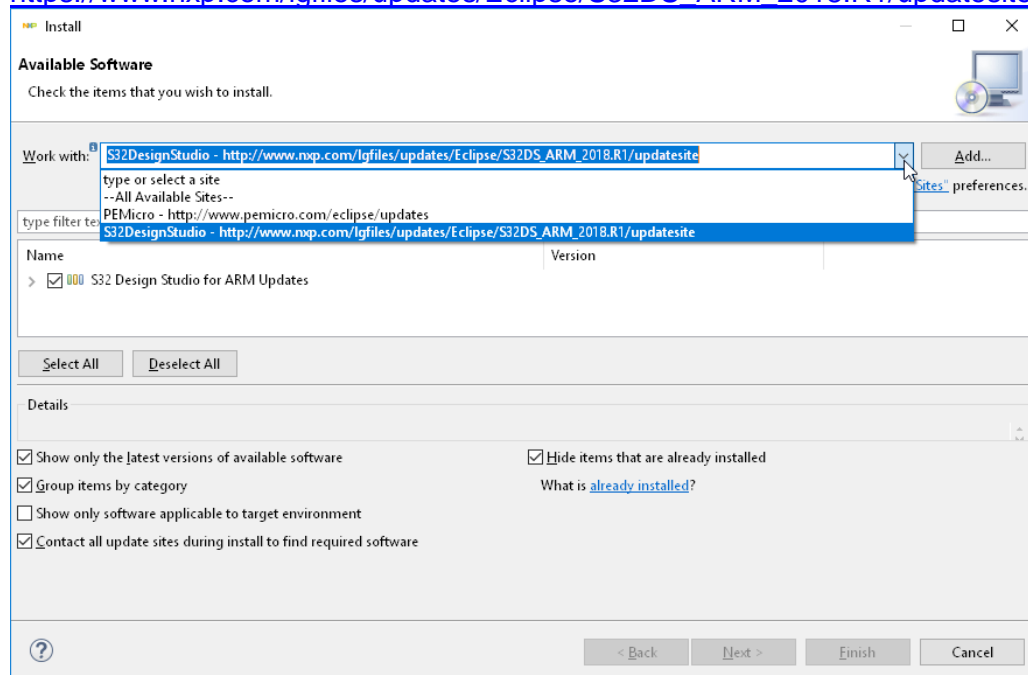
1. Run the S32K Design studio
2. Select Help->Install New Software



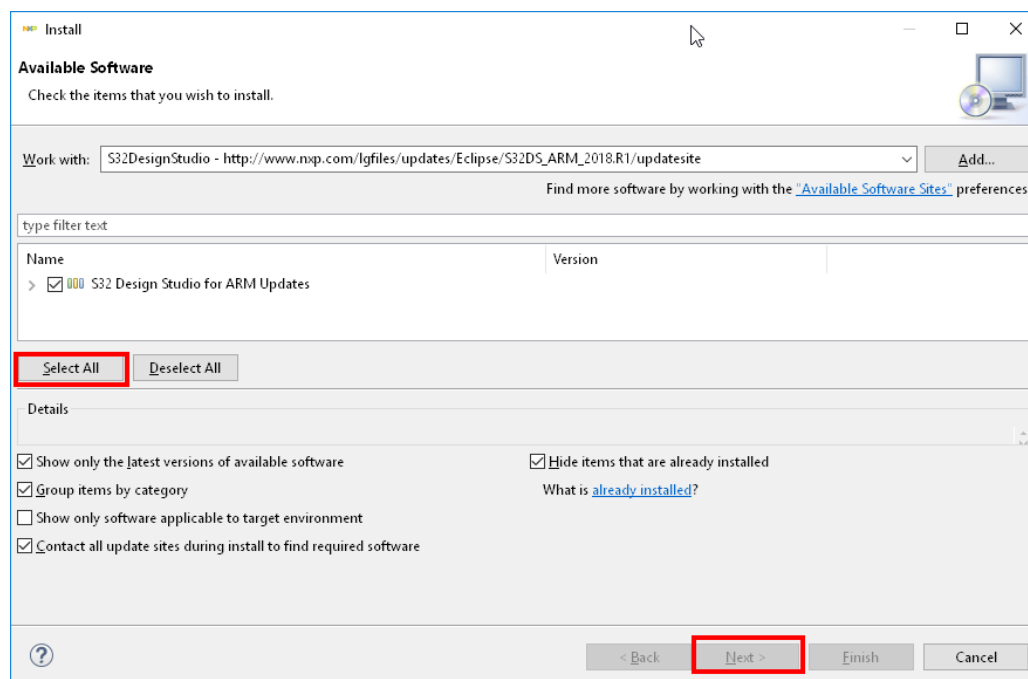


### 3. Select the server for download of the new packages

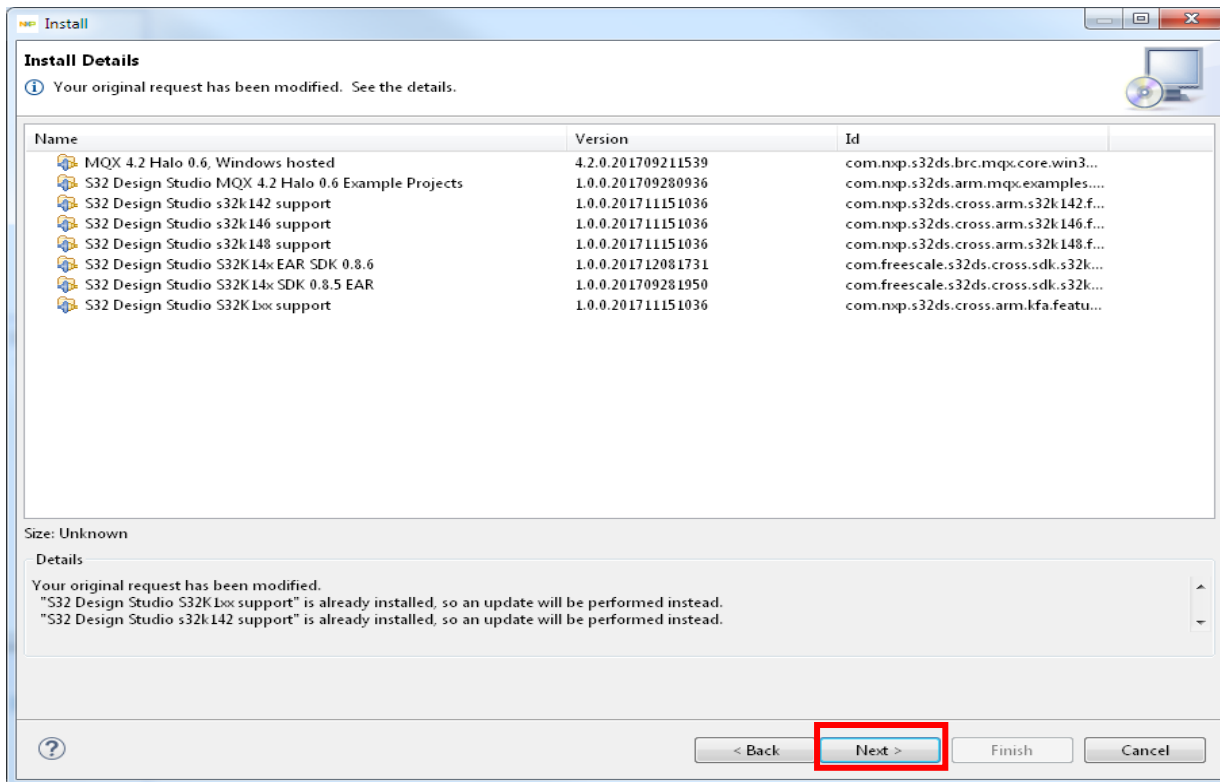
[https://www.nxp.com/lfiles/updates/Eclipse/S32DS\\_ARM\\_2018.R1/updatesite](https://www.nxp.com/lfiles/updates/Eclipse/S32DS_ARM_2018.R1/updatesite)



### 4. Click on Select All and then on Next



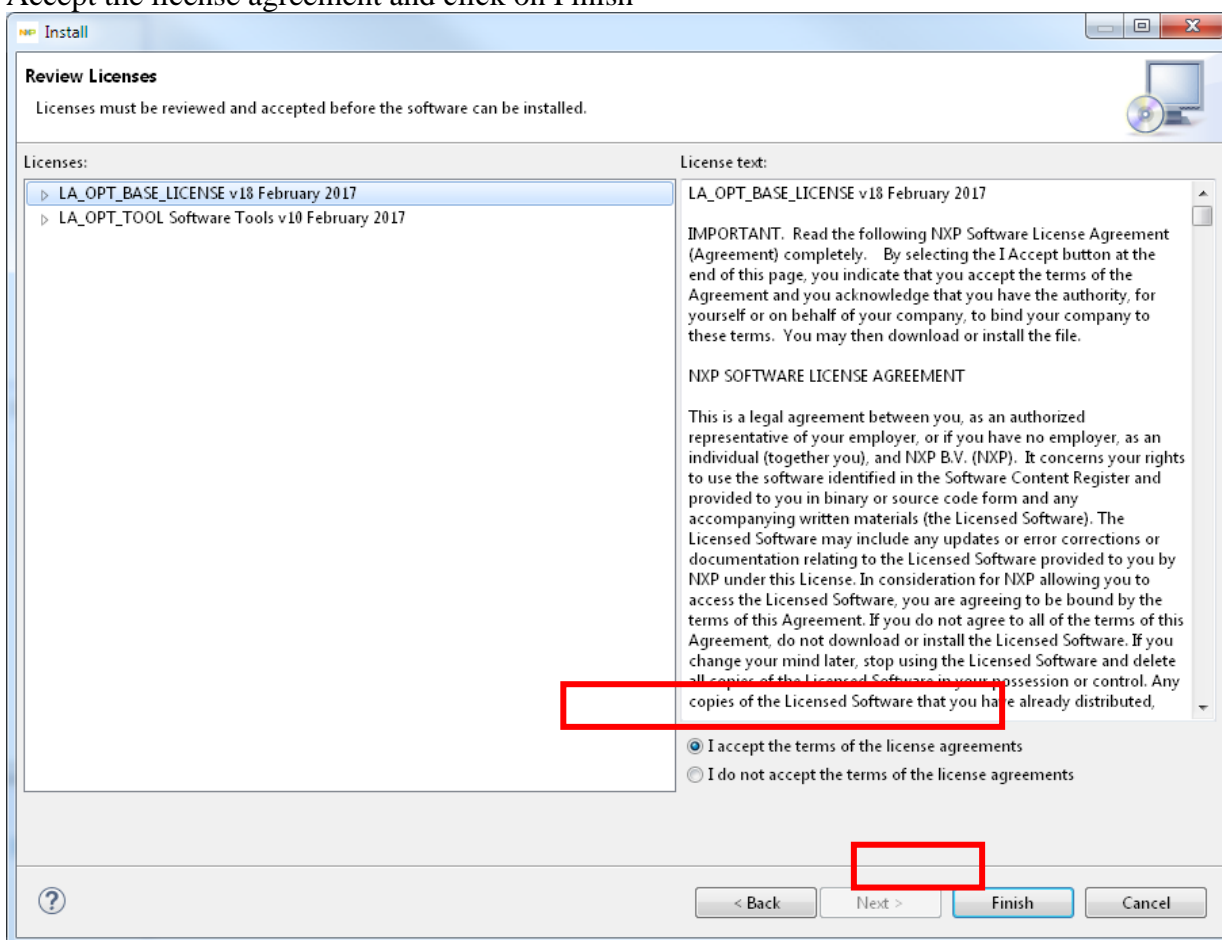
### 5. Click on Next



## NOTE

The list of available packages may differ as new support is added. Please select all S32SDK S32K1xx RTM\_3.0.0 related packages in the list above.

## 6. Accept the license agreement and click on Finish

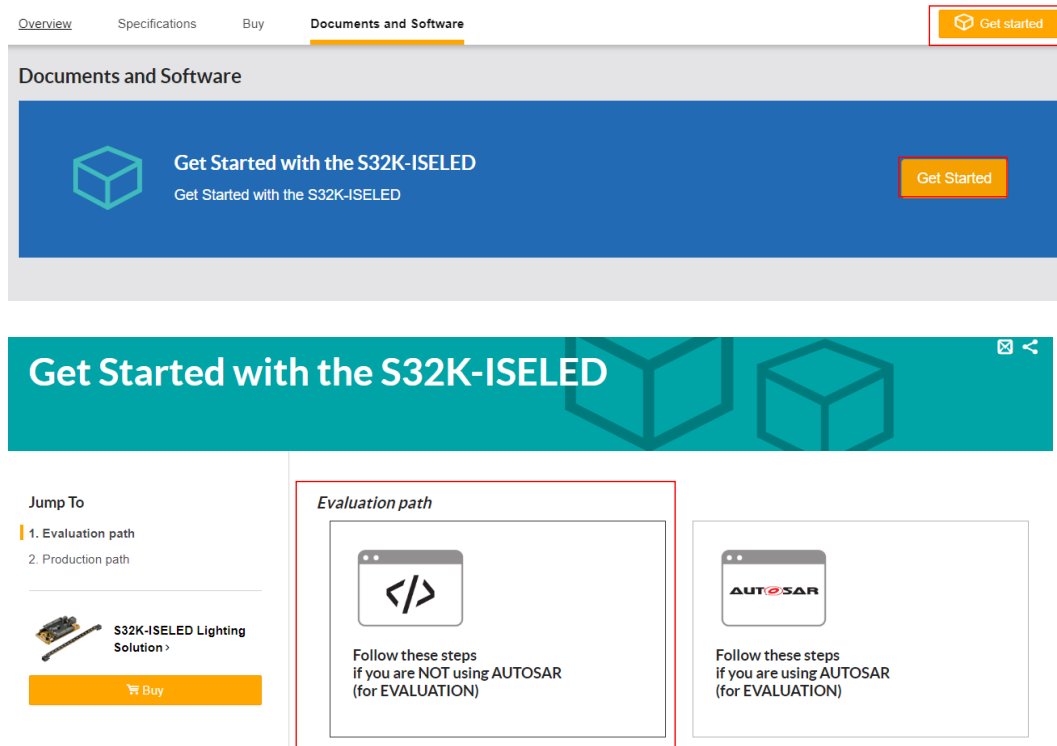


## 7. Wait for installation finish. Once the updates are installed, please proceed to the next stage, download and installation of the S32K SDK ISELED driver, described in next section.

## 4. Installation of S32K SDK ISELED driver

The S32K SDK ISELED driver RTM 3.0.0 provides the user with necessary API to initialize and drive the ISELED LEDs. It provides two options for communication interface, highly effective FlexIO interface and standard LPSPI interface. The S32K SDK ISELED driver is not part of standard S32K SDK installation and a separate download is required from nxp web. Please follow the instructions to proceed:

1. Visit [www.nxp.com/S32K-ISELED](http://www.nxp.com/S32K-ISELED) web page
2. Click [Get Started](#) Tab and Choose Evaluation Path for Non-AUTOSAR



3. Download the S32K SDK ISELED driver.

### 5. Download the S32K SDK ISELED driver

NOTE: S32K SDK ISELED driver is not integrated as part of standard S32 SDK installation.

[Download S32K SDK ISELED drive](#)

4. Alternatively, download link could also be found via [www.nxp.com/S32K-ISELED](http://www.nxp.com/S32K-ISELED) Documents and Software Tab.

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- Data Sheet (1)
- Fact Sheet (3)
- Reference Manual (2)
- Users Guide (2)

SOFTWARE (8)

- Development Software (1)
- Embedded Software (3)
- Embedded Application Software (4)

S32K MCAL 4.0 ISELED driver RTM 1.0.1 provides the user with necessary API to initialize and drive the ISELED LEDs. It provides two options for communication interface, highly effective FlexIO interface, and standard LPSPi interface. The driver is AUTOSAR 4.0.3 compliant and should be used together with S32K14X MCAL 4.0 RTM 1.0.4 (both QM and ISO 26262). Tested with IAR, GreenHills, and GCC compiler. Conditions of use for this software and other general information at [www.autosar.org](http://www.autosar.org) and at AUTOSAR.

2019-06-17 11:44:00 .exe 1 KB SW32K1X-ISL01E\_4\_0

 **S32K SDK ISELED driver (REV 0)** NEW

S32K SDK ISELED driver provides the user with the necessary API to initialize and drive the ISELED LEDs. It offers two options for communication interface, highly effective FlexIO interface, and standard LPSPi interface. Tested with IAR, GreenHills, GCC, Wind River Diab, and ARM compiler.

2019-06-17 15:23:00 .exe 1 KB SW32K1X-AISL01E

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Automotive SW – ISELED Software

Automotive SW – Touch Sense Software

8. Select the SW32K1-ISELED-RTM-3.0.0 or newer package. Below is an example screenshot for BETA 2.9.0, a previous release.



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Current Previous	
Version	Description
3.0.0	SW32K1-ISELED-RTM-3.0.0 ISELED middleware stack for control of Digital LEDs using the ISELED protocol.

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## 9. Accept the Software Terms and Conditions



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Please read the following agreement and click "I AGREE" at the bottom before downloading your software.

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IMPORTANT. Read the following NXP ISELED® Software License Agreement ("Agreement") completely. By selecting the "I Accept" button at the end of this page, or by downloading, installing, or using the Software, you indicate that you accept the terms of the Agreement and you acknowledge that you have the authority, for yourself or on behalf of your company, to bind your company to these terms. You may then download or install the file(s). In the event of a conflict between the terms of this Agreement and any license terms and conditions for NXP's proprietary software embedded anywhere in the Software file(s), the terms of this Agreement shall control. If a separate license agreement for the Software has been signed by you or your company and NXP, then that agreement shall govern your use of the Software and shall supersede this Agreement.

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## 10. Download the SCR, Release notes and installation package by selecting the packages



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## Product Download

### SW32K1-ISELED-RTM-3.0.0

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<input type="checkbox"/>	+	File Description	File Size	File Name
<input checked="" type="checkbox"/>	+	S32K1_ISELED_RTM_3.0.0.exe	1.5 MB	<a href="#">S32K1_ISELED_RTM_3.0.0.exe</a>
<input checked="" type="checkbox"/>	+	S32K1_ISELED_RTM_3.0.0_ReleaseNotes.pdf	602.6 KB	<a href="#">S32K1_ISELED_RTM_3.0.0_ReleaseNotes.pdf</a>
<input checked="" type="checkbox"/>	+	S32K1_ISELED_RTM_3.0.0_SCR.xls	10.4 KB	<a href="#">S32K1_ISELED_RTM_3.0.0_SCR.xls</a>

**Download Selected Files**

11. Generate the license file for the S32K SDK ISELED driver by selecting the License Keys tab.



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### SW32K1-ISELED-RTM-3.0.0

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<input type="checkbox"/>	+	File Description	File Size	File Name
<input checked="" type="checkbox"/>	+	S32K1_ISELED_RTM_3.0.0.exe	1.5 MB	<a href="#">S32K1_ISELED_RTM_3.0.0.exe</a>
<input checked="" type="checkbox"/>	+	S32K1_ISELED_RTM_3.0.0_ReleaseNotes.pdf	602.6 KB	<a href="#">S32K1_ISELED_RTM_3.0.0_ReleaseNotes.pdf</a>
<input checked="" type="checkbox"/>	+	S32K1_ISELED_RTM_3.0.0_SCR.xls	10.4 KB	<a href="#">S32K1_ISELED_RTM_3.0.0_SCR.xls</a>

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### SW32K1-ISELED-RTM-3.0.0

Generate

Item Description	S32K1x ISELED Controller Middleware (Binary) Internal Evaluation License
Order Number	
Purchase Order Number	
Total Number of Licenses	1

License Applicable to Product(s):

Version	Description
3.0.0	SW32K1-ISELED-RTM3.0.0

1 Available

Generate

12. Store the license file on your computer. Use this license file during the installation of the NXP S32K ISELED Driver. Important: the S32SDK\_S32K1xx\_RTM\_3.0.0 installation directory must be selected for the NXP S32K ISELED Driver installation.

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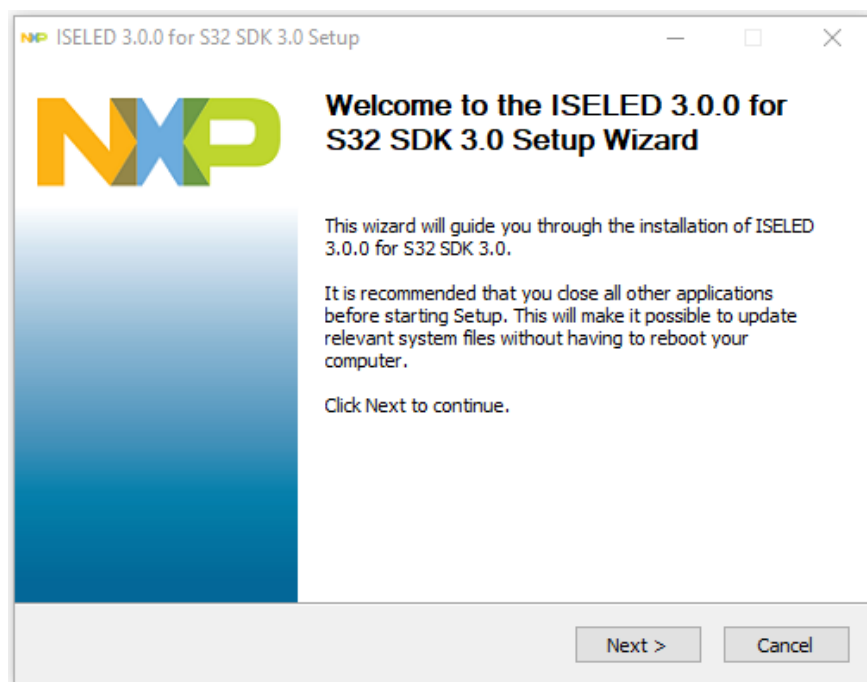
License Quantity: 1

Host ID: ANY

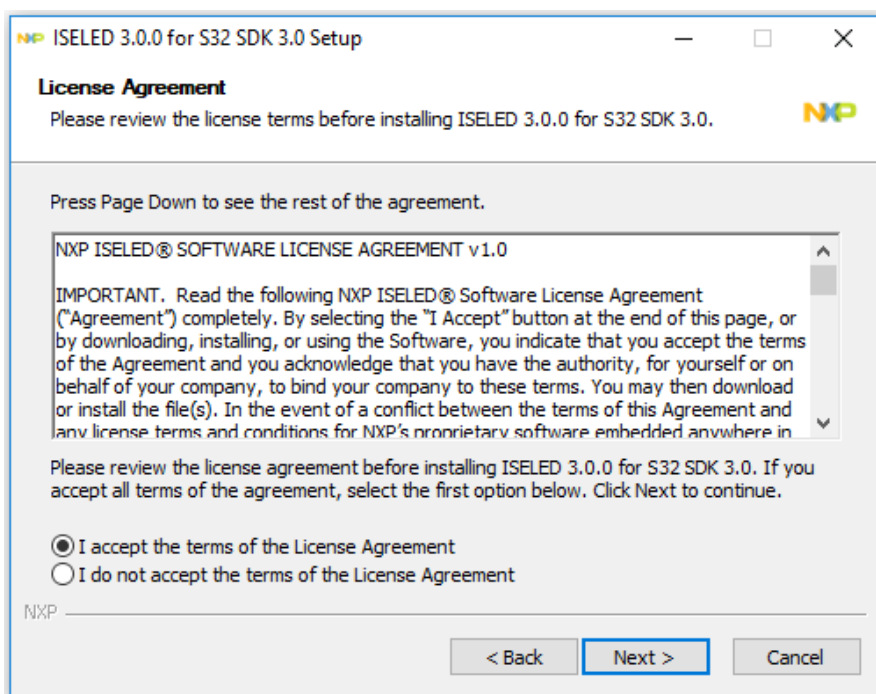
#S32K1x ISELED Controller Middleware (Binary) Internal Evaluation License -  
#SW32K1-ISELED-  
# License for ANY

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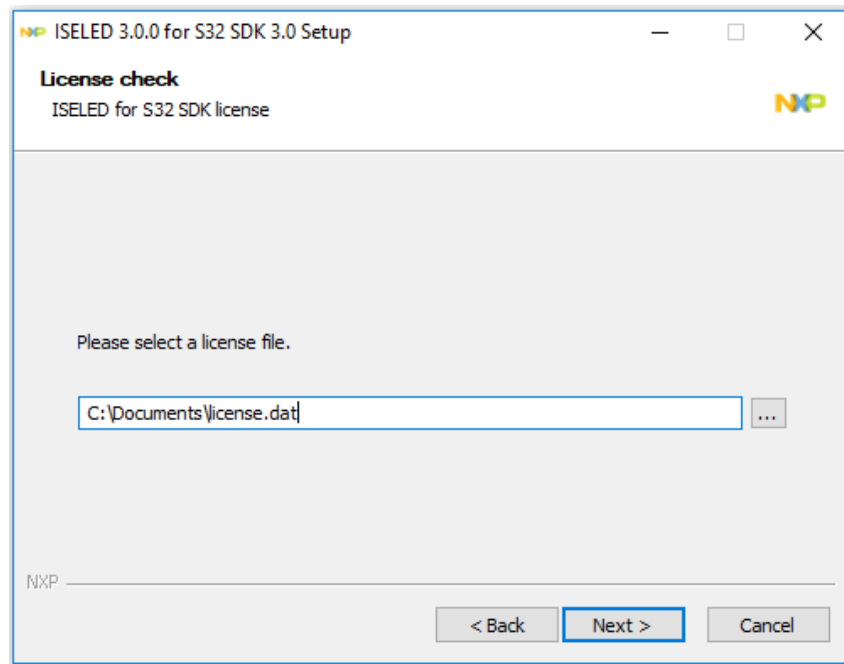
13. Run the ISELED Driver installer and click “Next”



14. Accept the terms of the License Agreement and continue

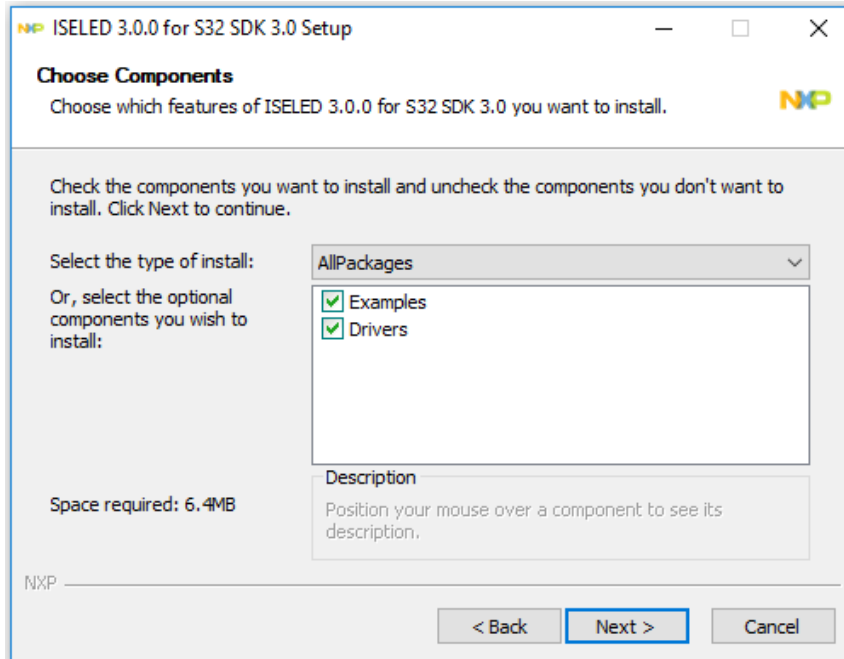


15. Select the license file that was saved previously

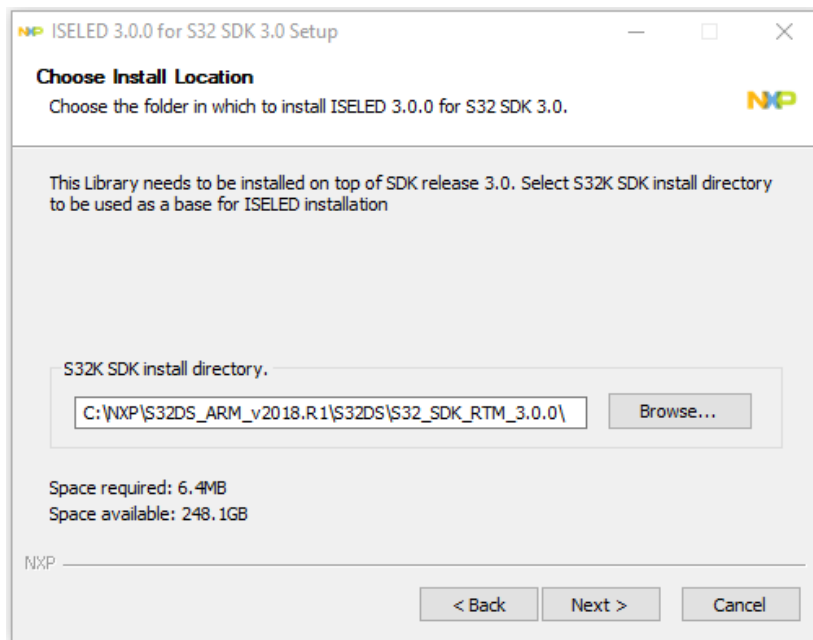


16. If the license expires, please contact [gpis.software@nxp.com](mailto:gpis.software@nxp.com) or your NXP sales representative and ask for an Activation Code to register the software

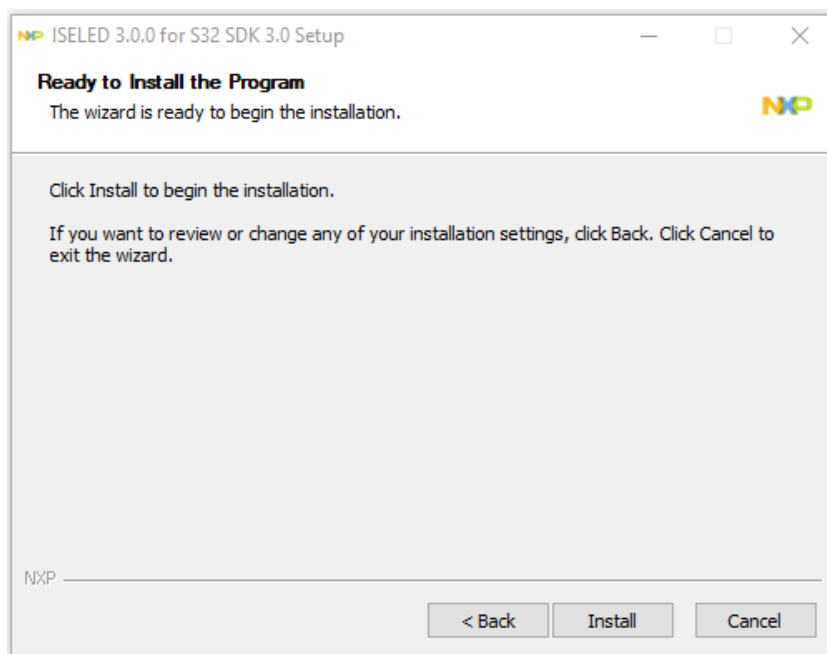
17. Select the components for the installation



18. Select the installation path. Make sure that the installation path is the same as the S32K SDK RTM 3.0.0 installation folder



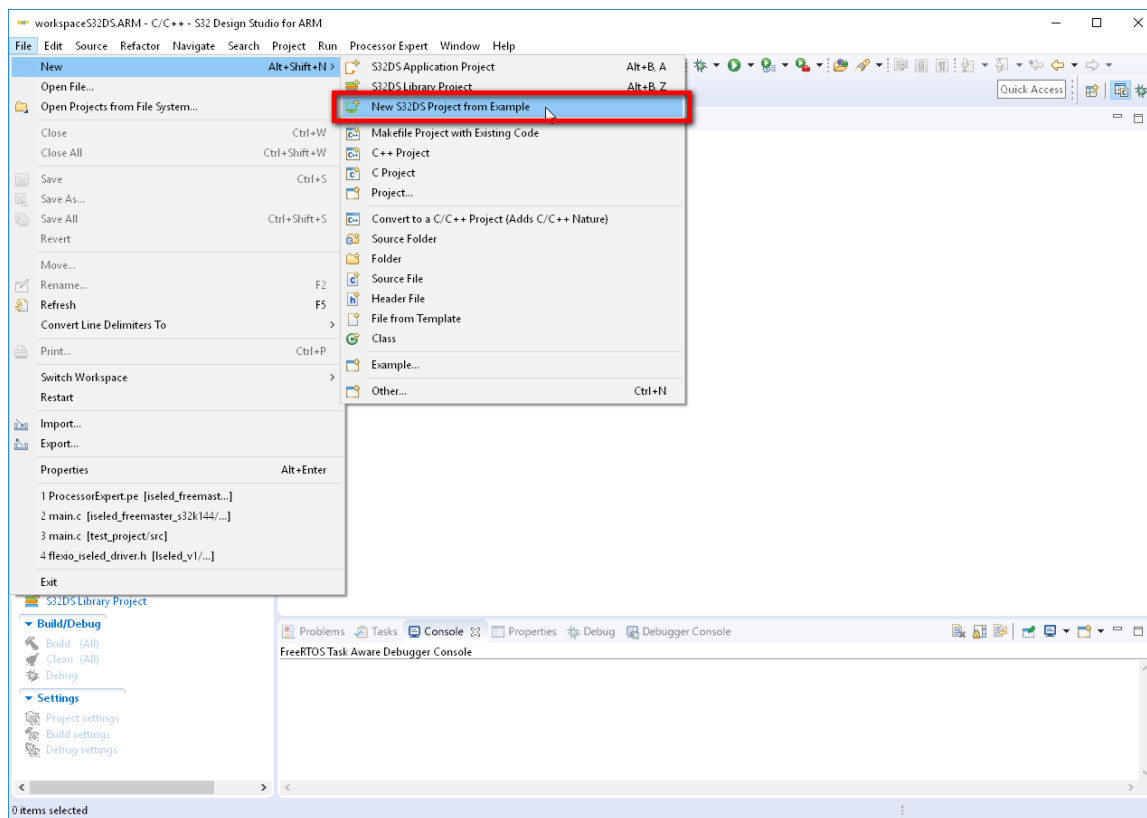
19. Finally click Install to start the setup



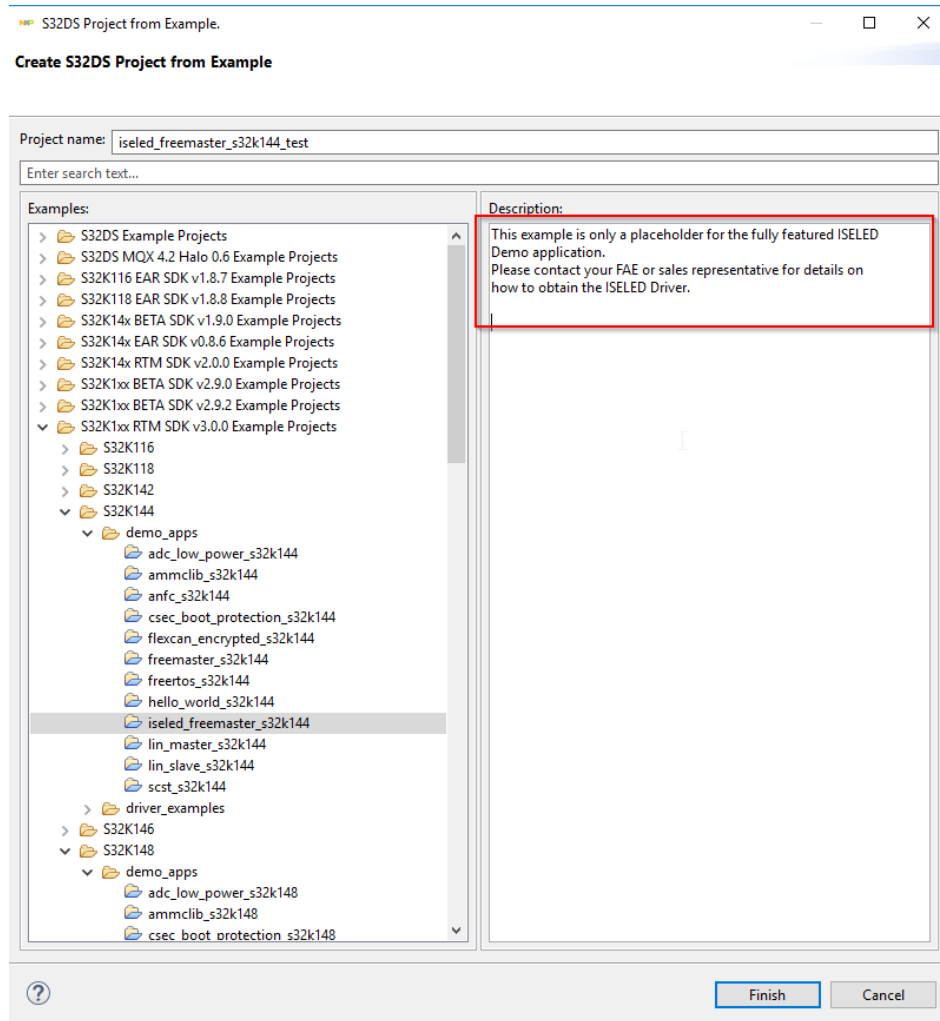
## 5. Troubleshooting

To verify the ISELED Driver installation please follow the next steps:

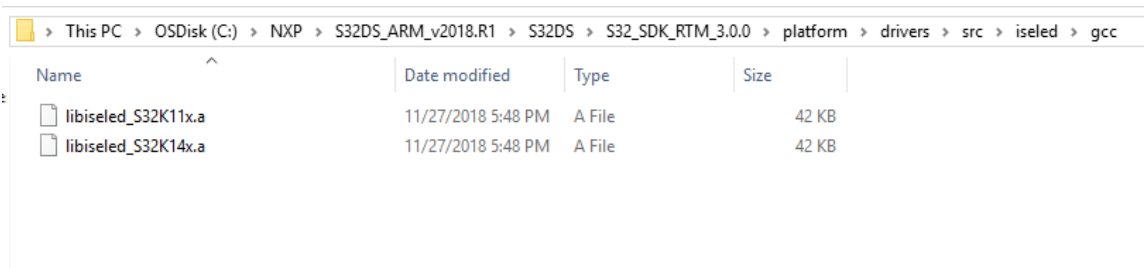
1. Start the S32 Design studio and select New S32DS Project from Example in File menu.



2. If the description of the ISELED Driver example application states that the example is a placeholder, it means that the installation path for the ISELED Driver did not match the S32K SDK RTM 3.0.0 installation folder. Please see step 3.16.

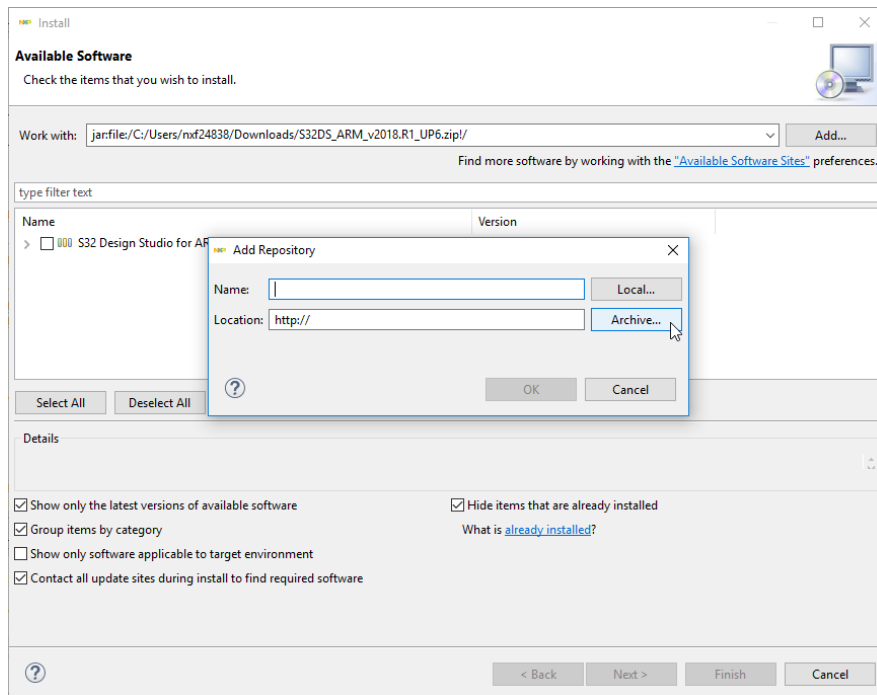


3. Another way to verify the ISELED Driver installation is to check if the ISELED libraries are present in the S32K SDK RTM 3.0.0 installation folder

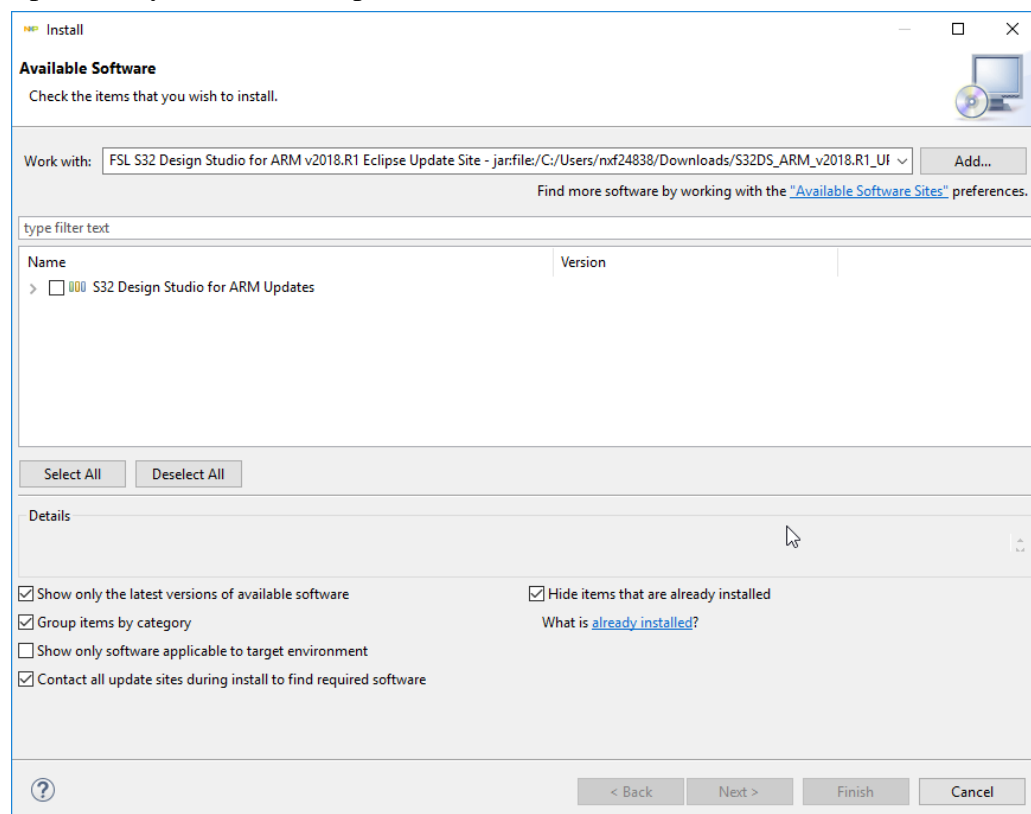


4. In the case that the S32DesignStudio - [http://www.nxp.com/lqfiles/updates/Eclipse/S32DS\\_ARM\\_2018.R1/updatesite](http://www.nxp.com/lqfiles/updates/Eclipse/S32DS_ARM_2018.R1/updatesite) is not reachable, the SDK can be manually installed.
5. Download the update package from Updated/Patches (for ADM S32DS - [https://www.nxp.com/support/developer-resources/run-time-software/s32-design-studio-ide/s32-design-studio-ide-for-arm-based-mcus:S32DS-ARM?&tab=Design\\_Tools\\_Tab](https://www.nxp.com/support/developer-resources/run-time-software/s32-design-studio-ide/s32-design-studio-ide-for-arm-based-mcus:S32DS-ARM?&tab=Design_Tools_Tab)

6. In Design Studio click on Help -> Install new software and choose Add -> Archive



7. Select the previously downloaded update ZIP file and continue with the Next button



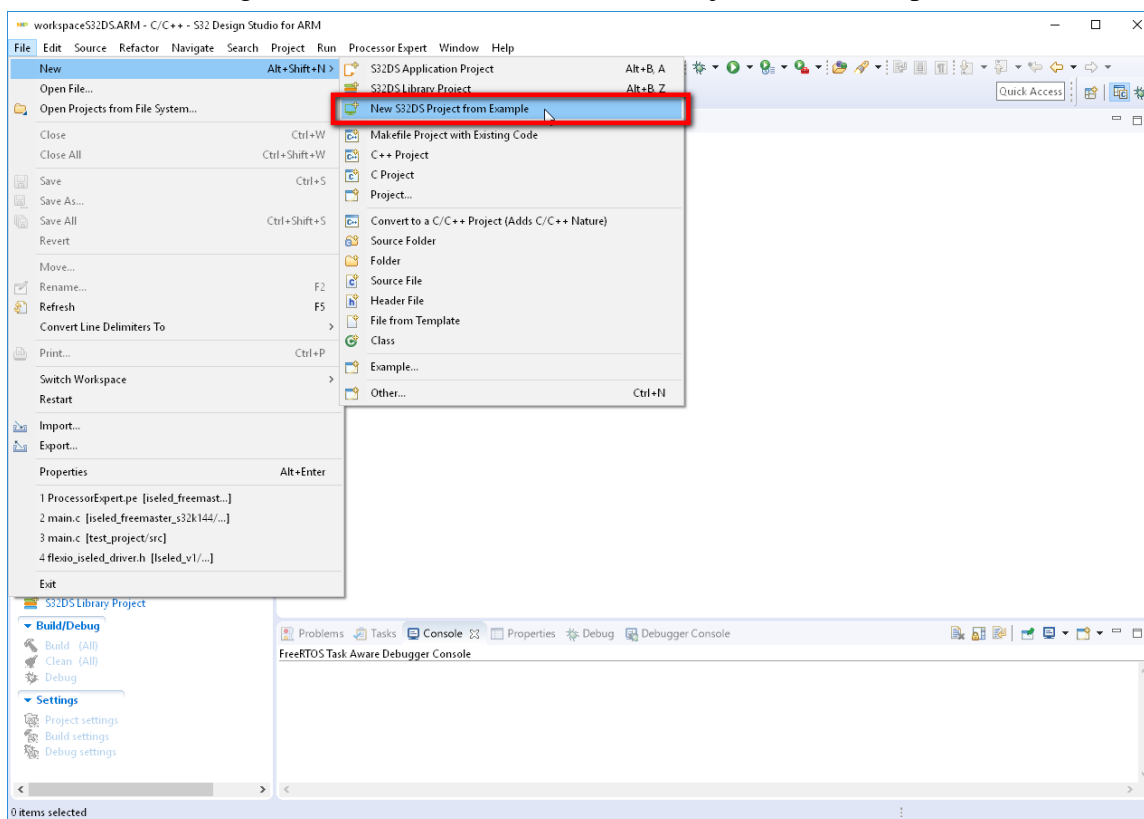
## 6. Starting from S32K SDK ISELED example application

The S32K SDK ISELED driver is provided with the example application. The example application uses FreeMASTER SW component from NXP, used for data visualization and operation of project flow. In case the FreeMASTER SW component is not installed on your computer, please visit the [www.nxp.com/freemaster](http://www.nxp.com/freemaster) website to download the installation package of the FreeMASTER component.

For a detailed description of the ISELED Driver example application, please refer to the ISELED\_UserGuide document that can be found in the installation path under the “doc” folder.

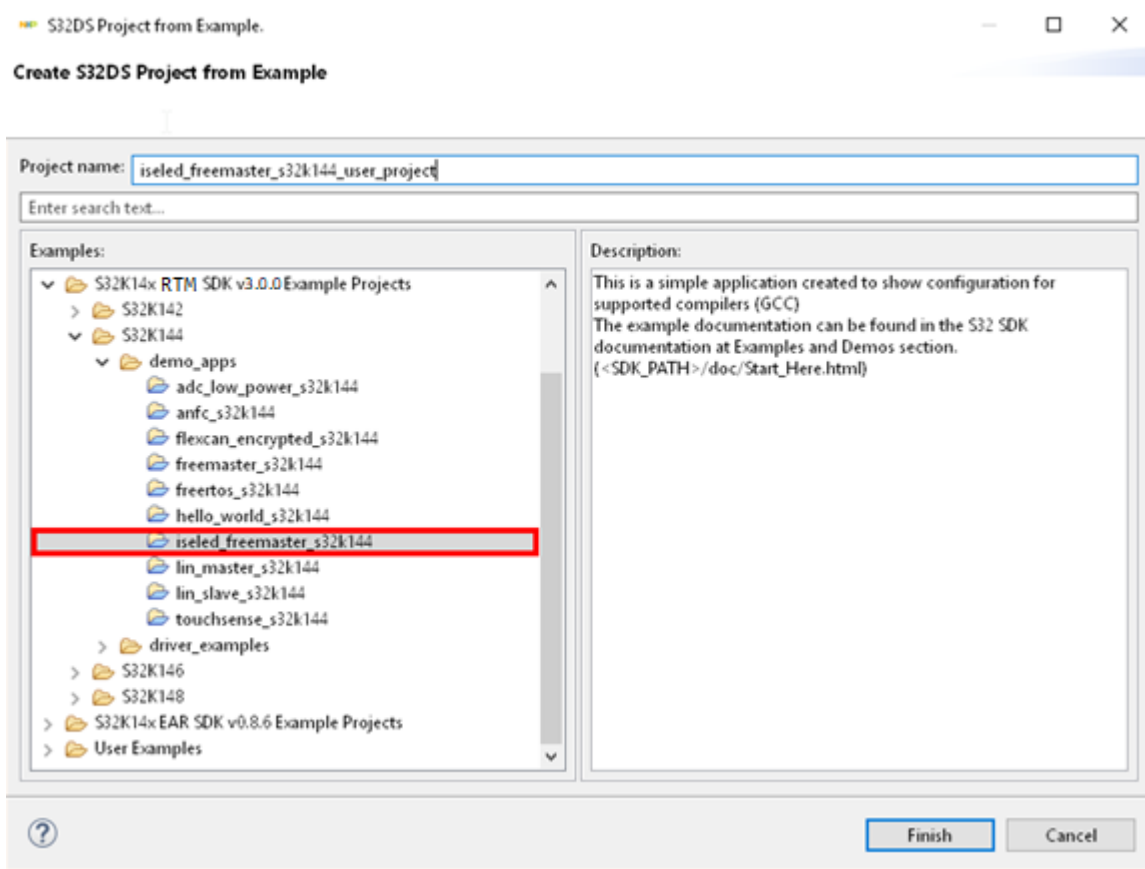
To start the user application based on this example, please follow these instructions:

1. Start the S32 Design studio and select New S32DS Project from Example in File menu.

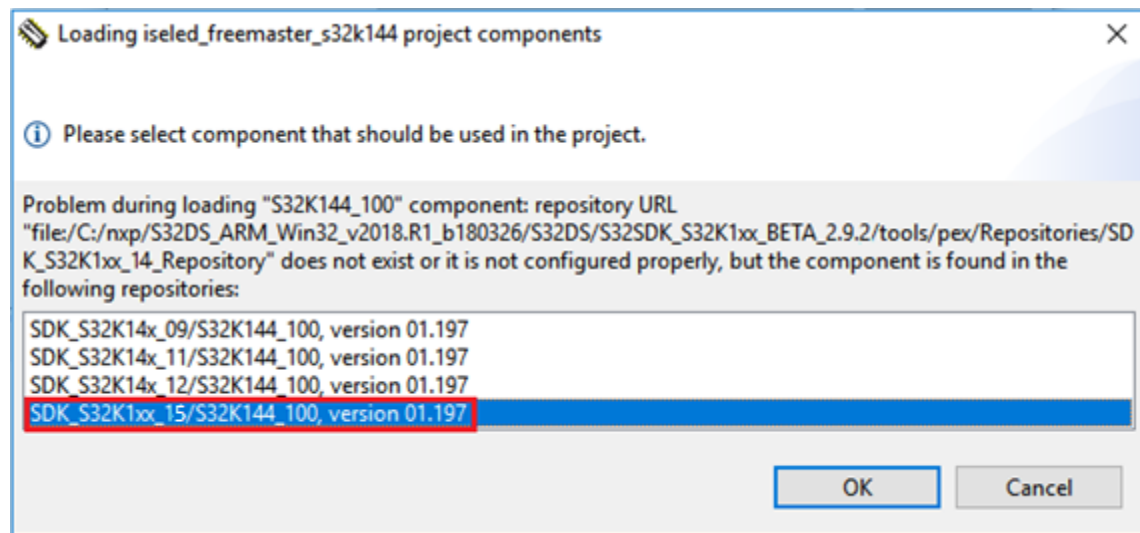


2. Select the iseled\_freemaster\_s32k144 example application from the S32K144 examples list.



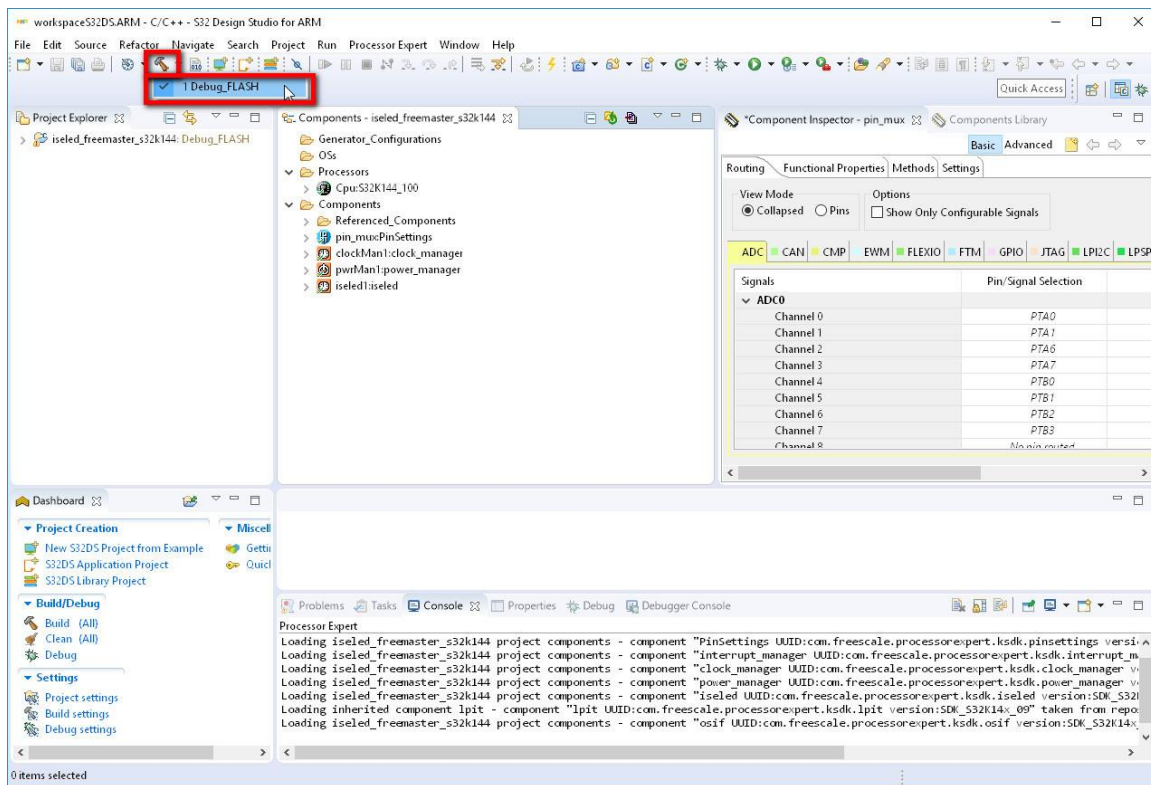


- In case the pop-up window is displayed, select the SDK\_S32K1xx\_15 components repository.

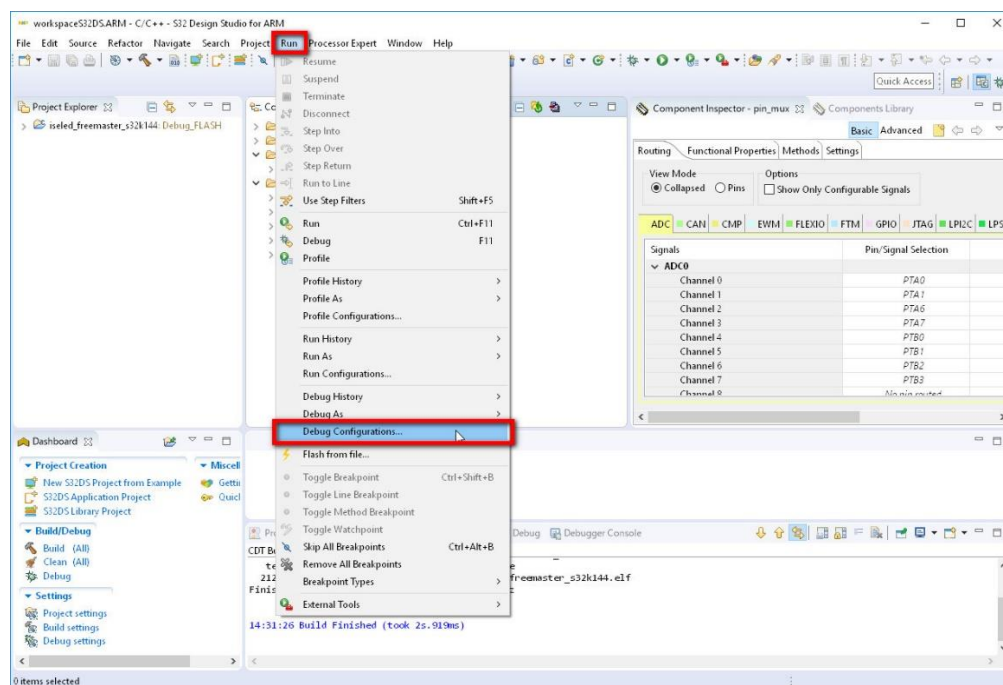


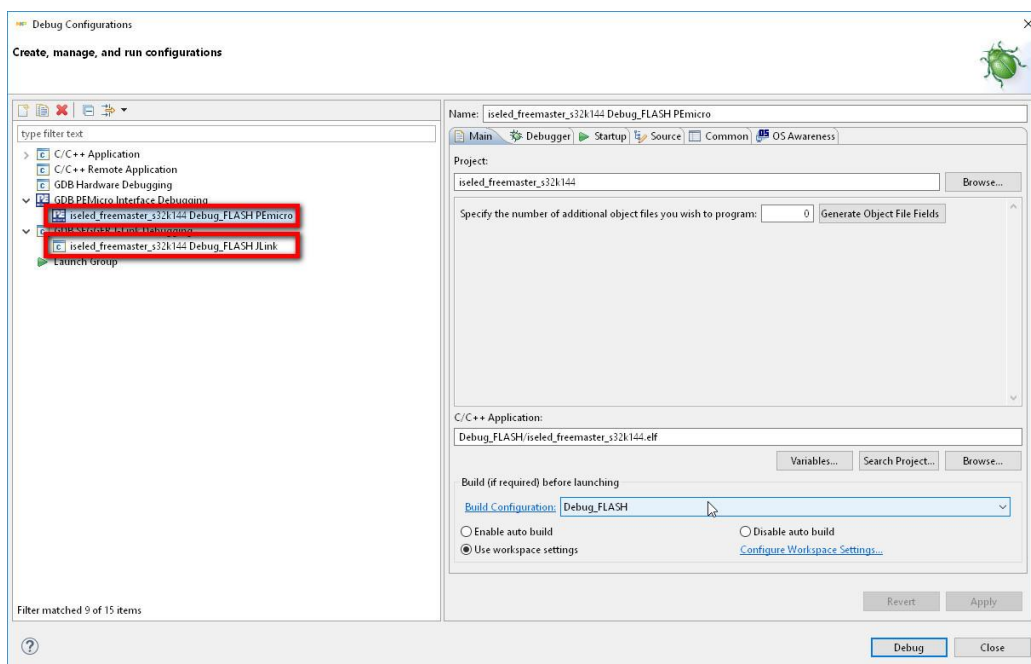


- Build the project by selecting the build command from the menu bar and selecting the Debug\_FLASH option.



- Choose the debugging option by selecting Run menu and Debug Configuration item. Here you can select the Debug interface option.





For more details about the S32K SDK ISELED driver, please open the driver documentation, stored in the installation folder.

For a detailed description of the ISELED Driver example application please read the ISELED\_UserGuide document that can be found in the installation path under the “doc” folder.

### NOTE

The S32K SDK ISELED example project is using FreeMASTER SW component from NXP, used for data visualization and operation of project flow. In case the FreeMASTER SW component is not installed on user computer, please visit the [www.nxp.com/freemaster](http://www.nxp.com/freemaster) to download the installation of the FreeMASTER component.



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