NXP Semiconductors
User Guide

Document Number: S32KSDKISELEDRTMUG
Rev. 1, 09/2019

S32K SDK ISELED BETA 3.9.0 Driver Installation Guide

Contents

1. INTRODUCTION....3
2. DOWNLOADING THE S32 DESIGN STUDIO IDE....3
3. UPDATING THE S32 SOFTWARE DEVELOPMENT KIT....8
4. INSTALLATION OF S32K SDK ISELED DRIVER....12
5. TROUBLESHOOTING....21
2. STARTING FROM S32K SDK ISELED EXAMPLE APPLICATION....24

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 BETA 3.9.0 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.

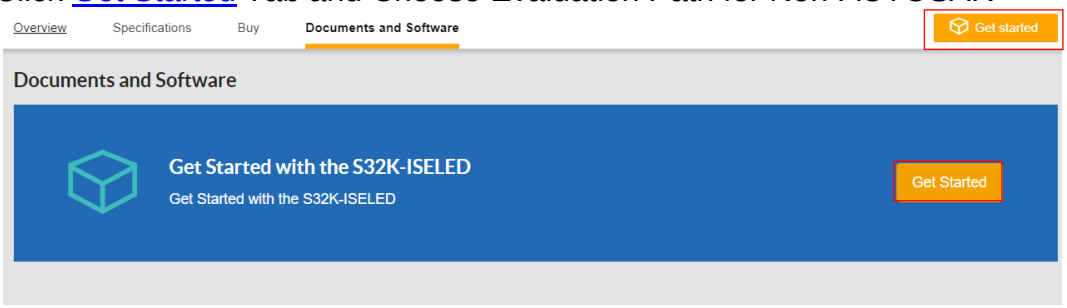
NOTE

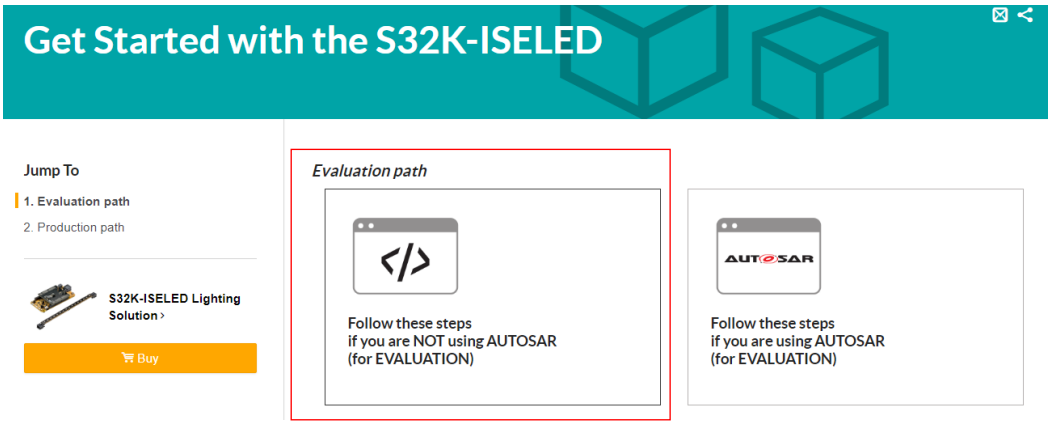
Despite this document might refer to particular revision of NXP SW, it is highly recommended to use the latest available versions of the SW. Those versions might not be listed in the screenshots presented in this document at the time of creation.

The screenshots are example screenshot from RTM 3.0.0 release

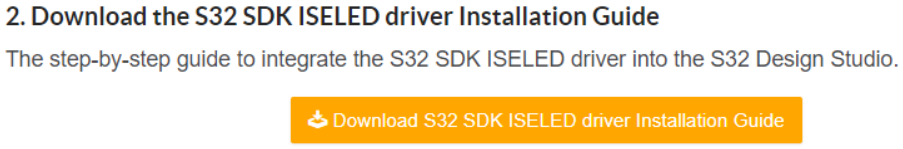
In order to download the S32 Design Studio IDE, please follow these steps:

1. Visit the www.nxp.com/S32K-ISELED
2. Click Get Started Tab and Choose Evaluation Path for Non-AUTOSAR

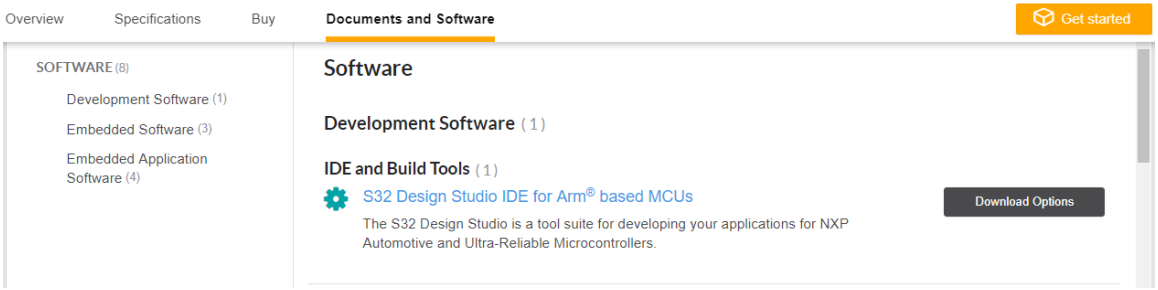




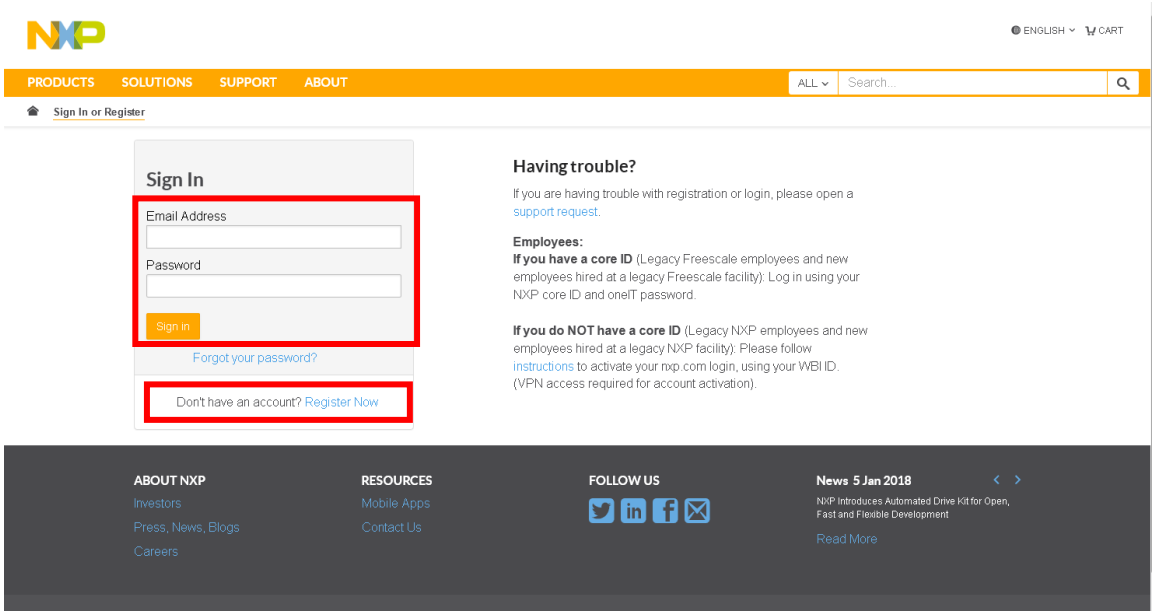
3. Download Design Studio for ARM 2018.R1 (or newer) for ARM® based MCUs:



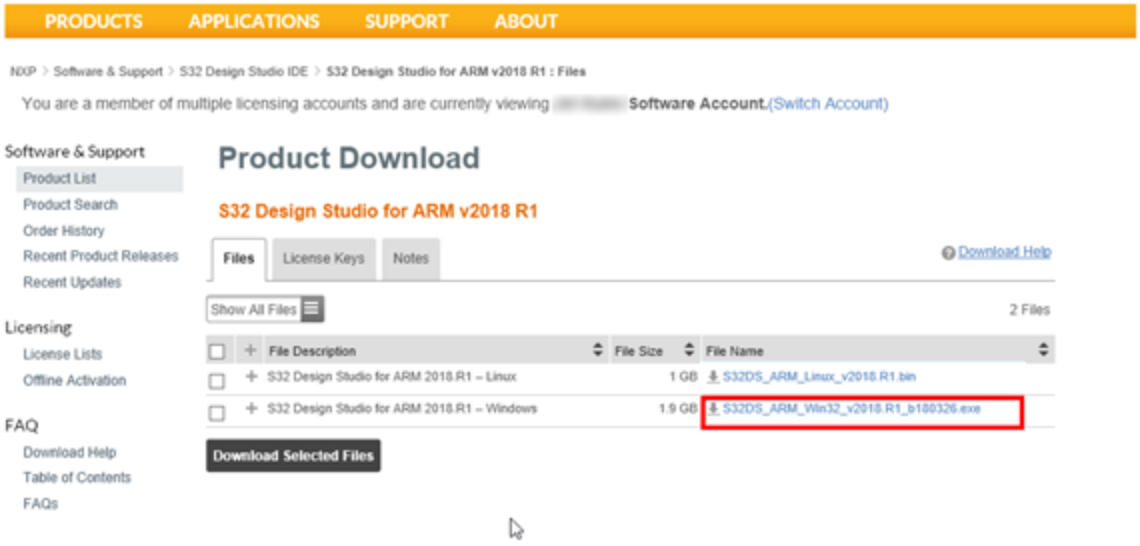
Alternatively, download link could also be found via www.nxp.com/S32K-ISELED Documents and Software Tab.



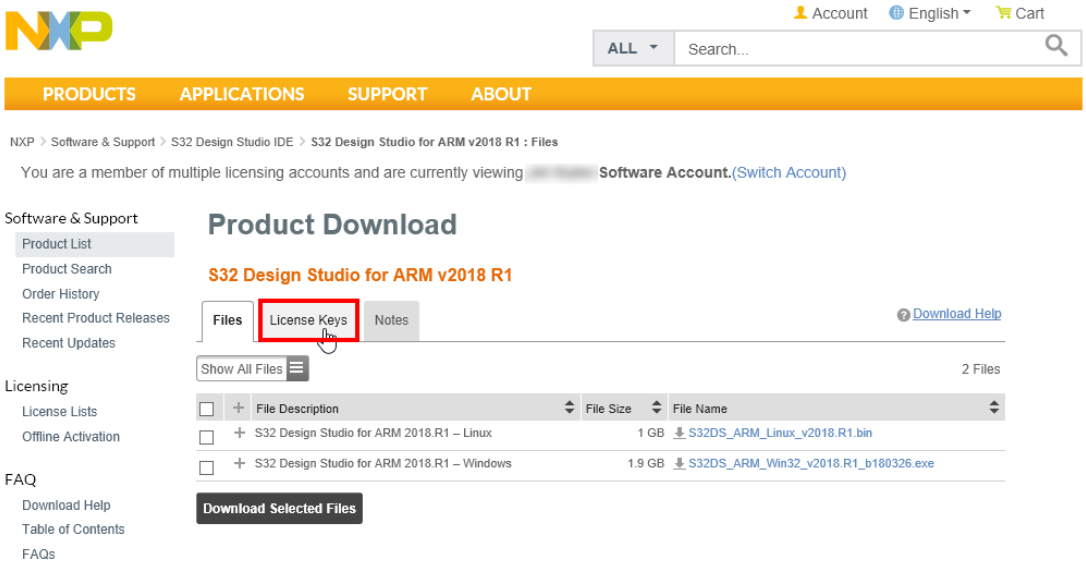
4. To proceed with the download, the user needs to be logged-in using the user account. In case of new user, please proceed with the Register Now option prior logging into the NXP web page.

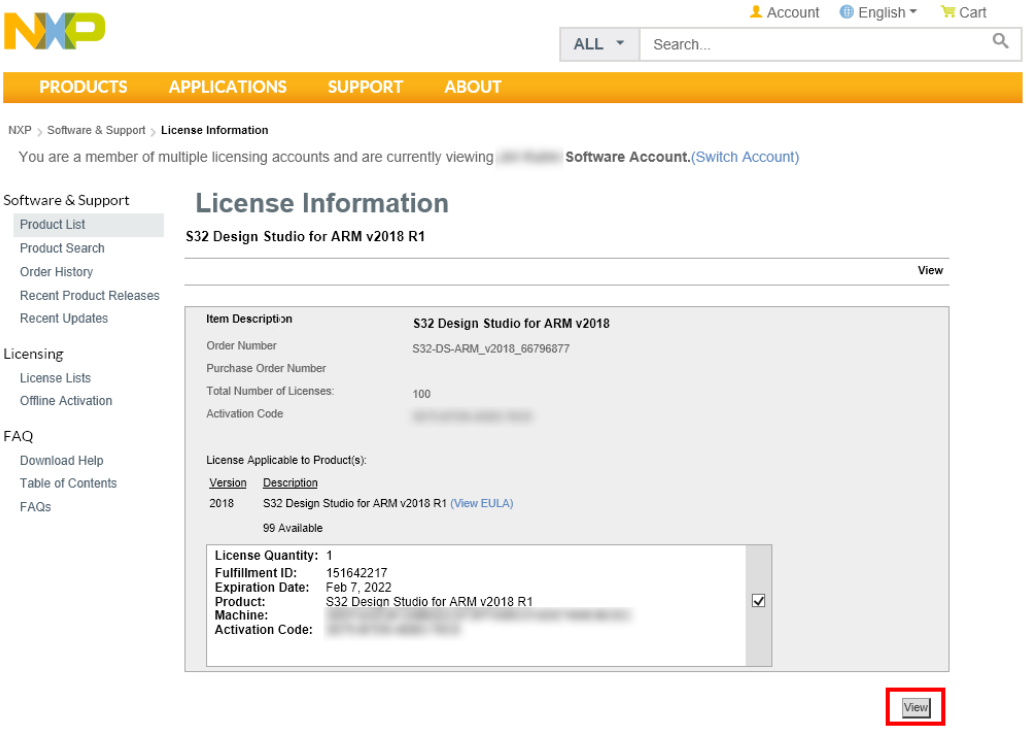


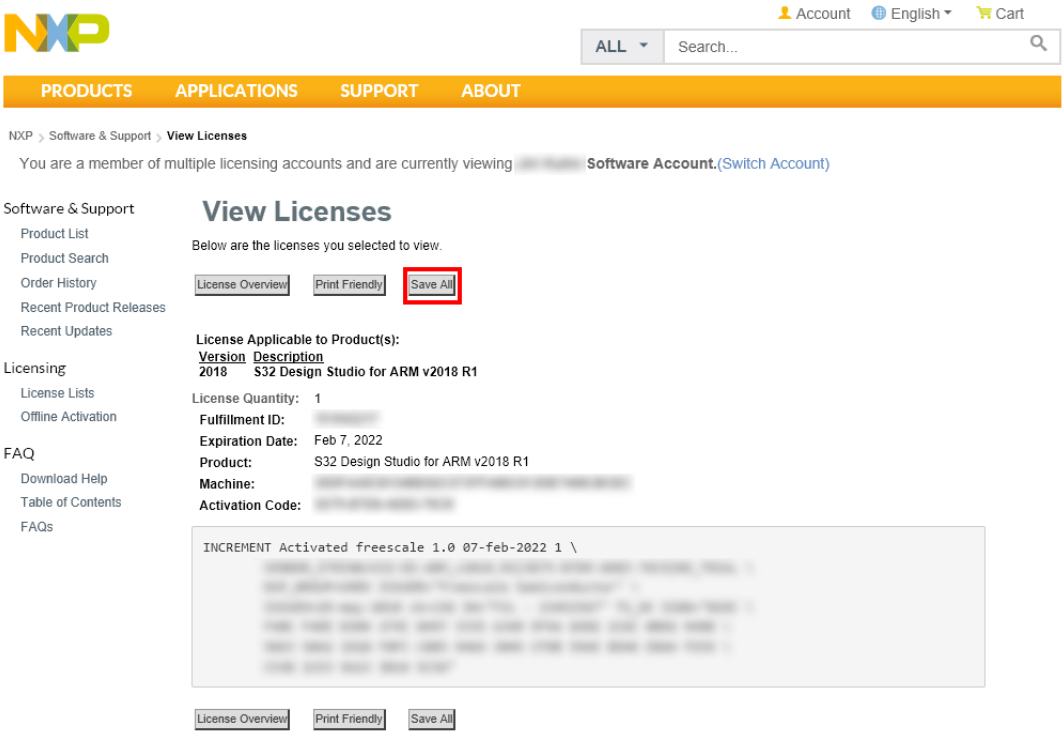
5. Download the installation package of S32 Design Studio by selecting appropriate version, based on the operation system on your PC. After download, follow the instruction of the Installation shield to proceed.



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


Account
English
Cart
ALL
Search...
PRODUCTS
APPLICATIONS
SUPPORT
ABOUT
NXP > Software & Support > S32 Design Studio IDE > S32 Design Studio for ARM v2018 R1 : Files
You are a member of multiple licensing accounts and are currently viewing Software Account.(Switch Account)
Software & Support
Product List
Product Search
Order History
Recent Product Releases
Recent Updates
Licensing
License Lists
Offline Activation
FAQ
Download Help
Table of Contents
FAQs
Product Download
S32 Design Studio for ARM v2018 R1
Files
License Keys
Notes
Download Help
Show All Files
2 Files
File Description
File Size
File Name
S32 Design Studio for ARM 2018.R1 – Linux
1 GB
S32DS_ARM_Linux_v2018.R1.bin
S32 Design Studio for ARM 2018.R1 – Windows
1.9 GB
S32DS_ARM_Win32_v2018.R1_b180326.exe
Download Selected Files

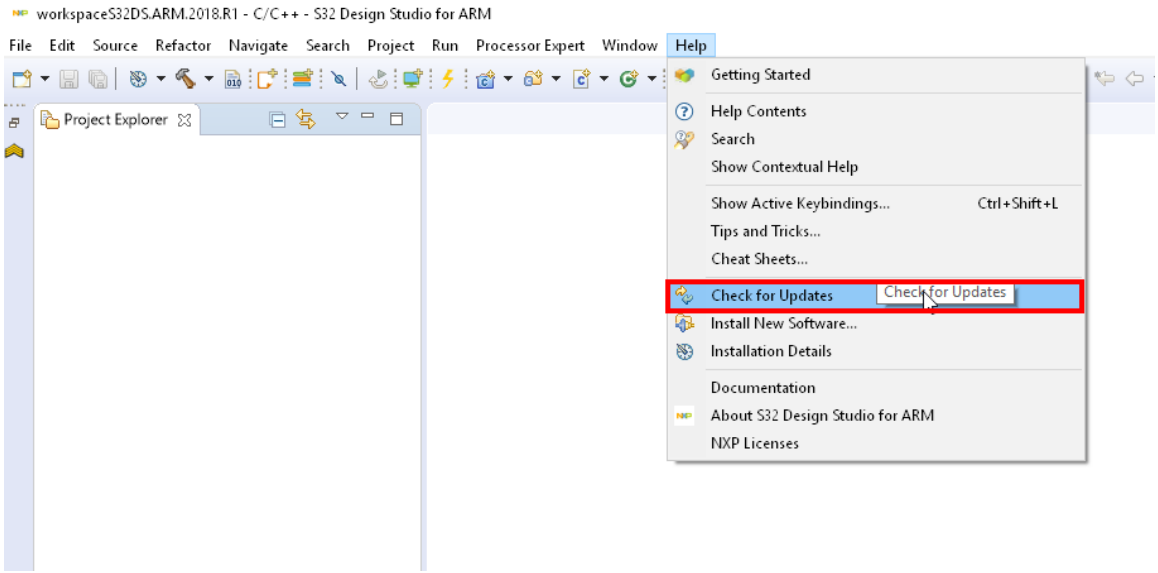

Account
English
Cart
ALL
Search...
PRODUCTS
APPLICATIONS
SUPPORT
ABOUT
NXP > Software & Support > License Information
You are a member of multiple licensing accounts and are currently viewing Software Account.(Switch Account)
Software & Support
Product List
Product Search
Order History
Recent Product Releases
Recent Updates
Licensing
License Lists
Offline Activation
FAQ
Download Help
Table of Contents
FAQs
License Information
S32 Design Studio for ARM v2018 R1
View
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

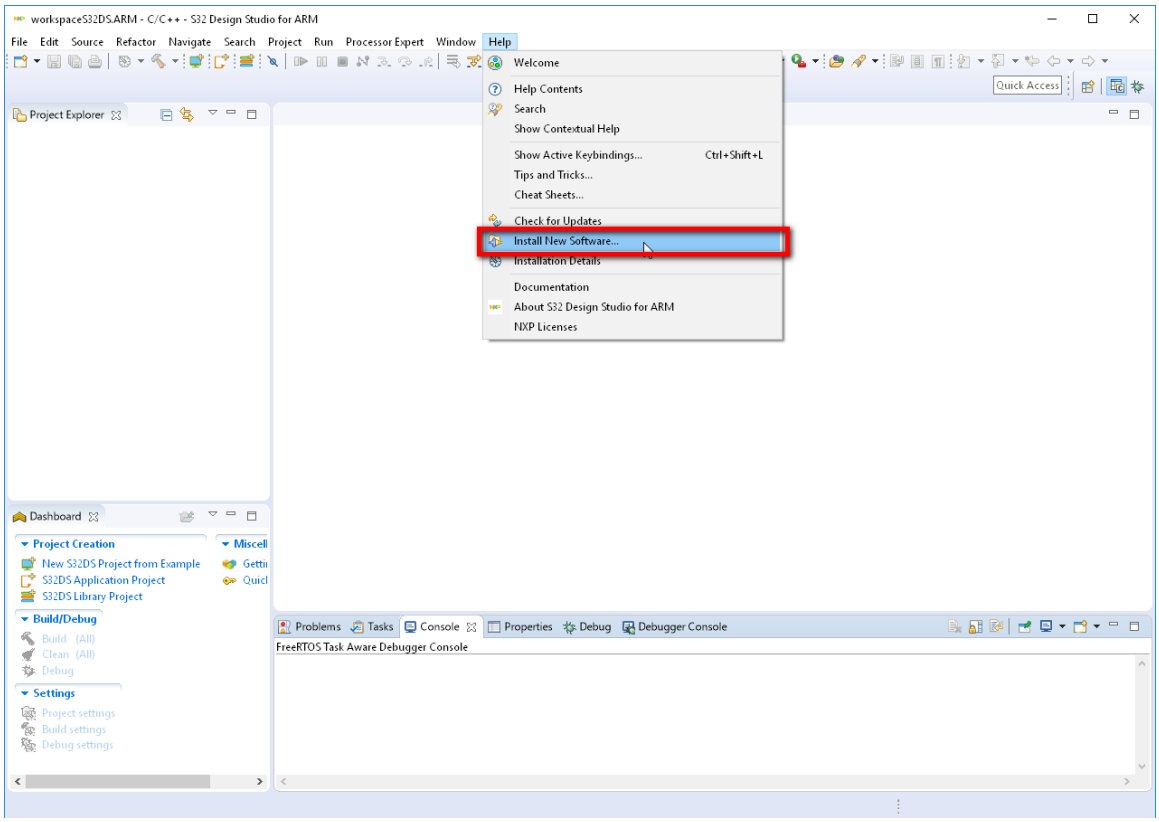
If you already have the S32 Design Studio installed on your computer, please make sure you update your installation, prior proceeding to next chapter.



3. Updating the S32 Software Development Kit

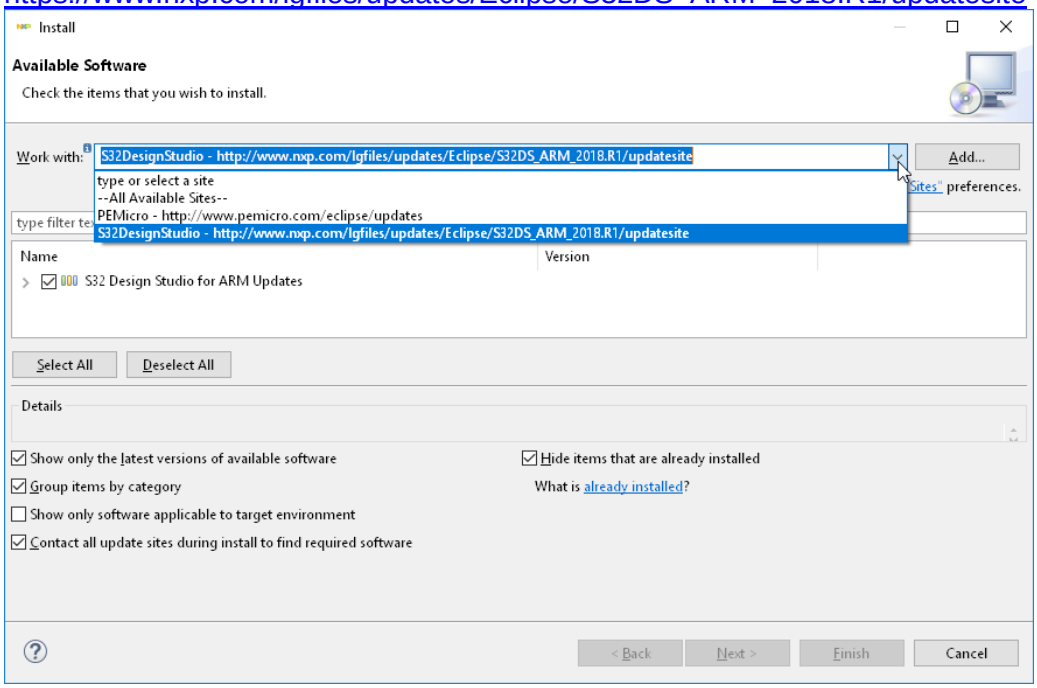
The S32 Software Development Kit (S32 SDK) is an extensive suite of robust hardware interface and hardware abstraction layers, peripheral drivers, RTOS, stacks, and middleware designed to simplify and accelerate application development on NXP S32K microcontrollers. As the S32K SDK ISELED driver was tested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

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

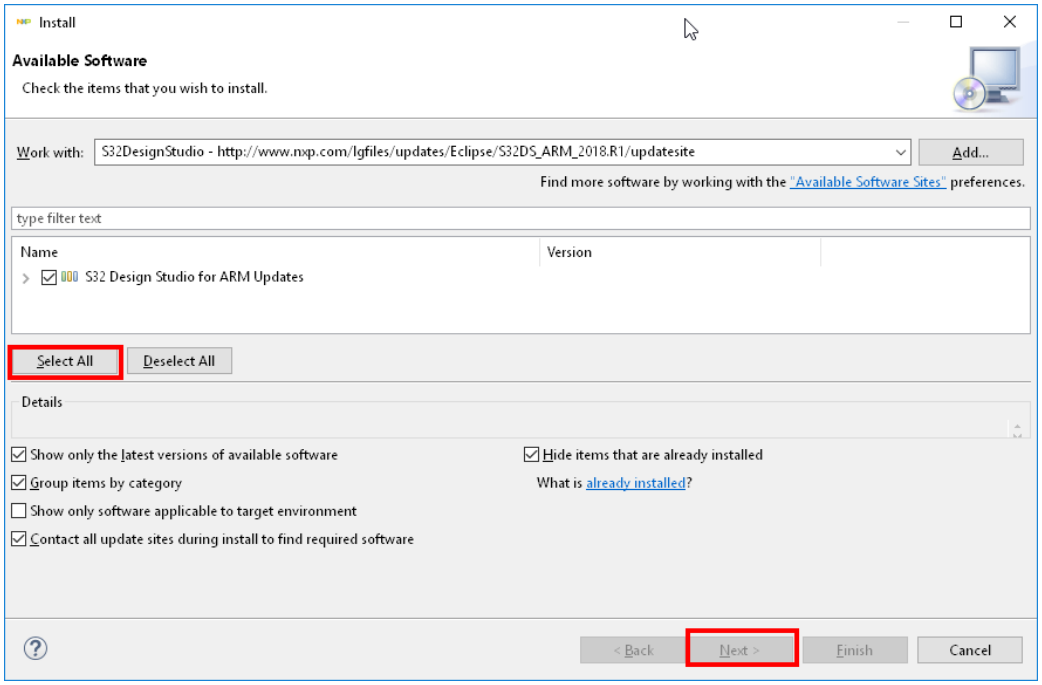


3. Select the server for download of the new packages

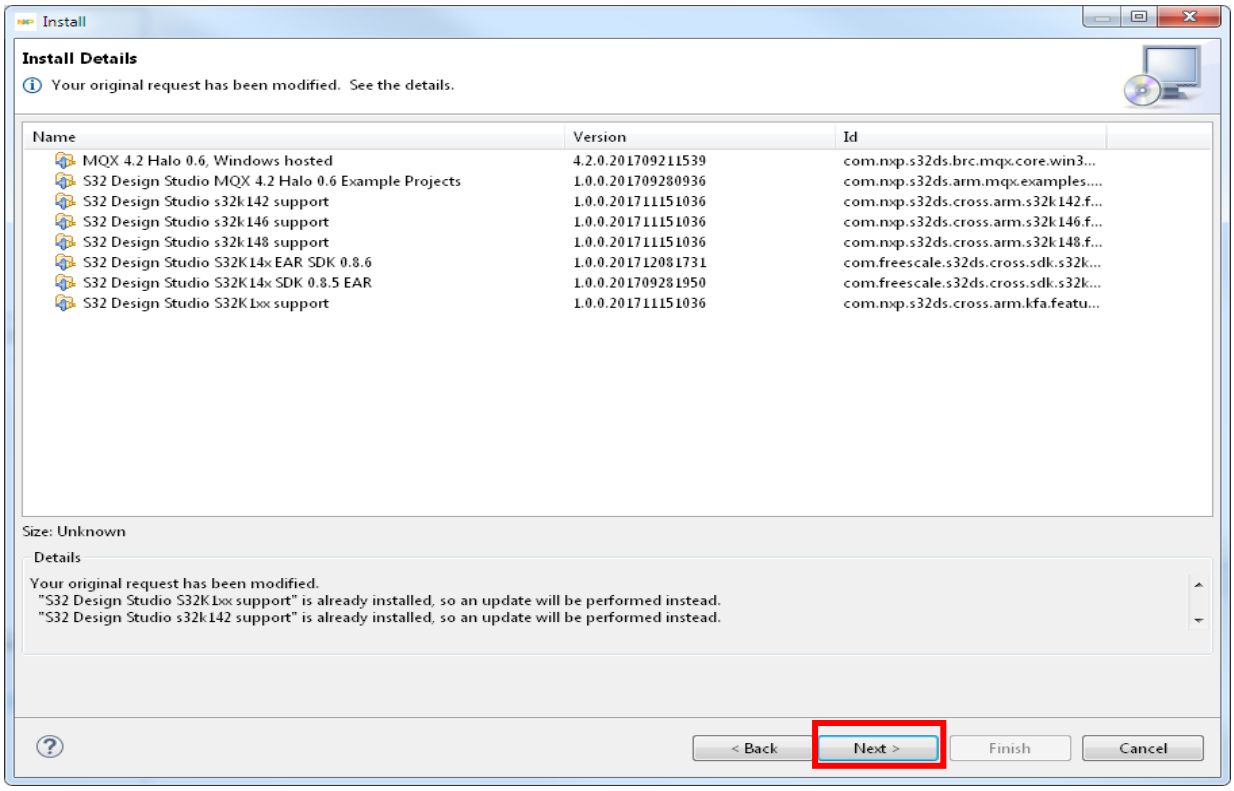
https://www.nxp.com/lgfiles/updates/Eclipse/S32DS_ARM_2018.R1/updatesite



4. Click on Select All and then on Next



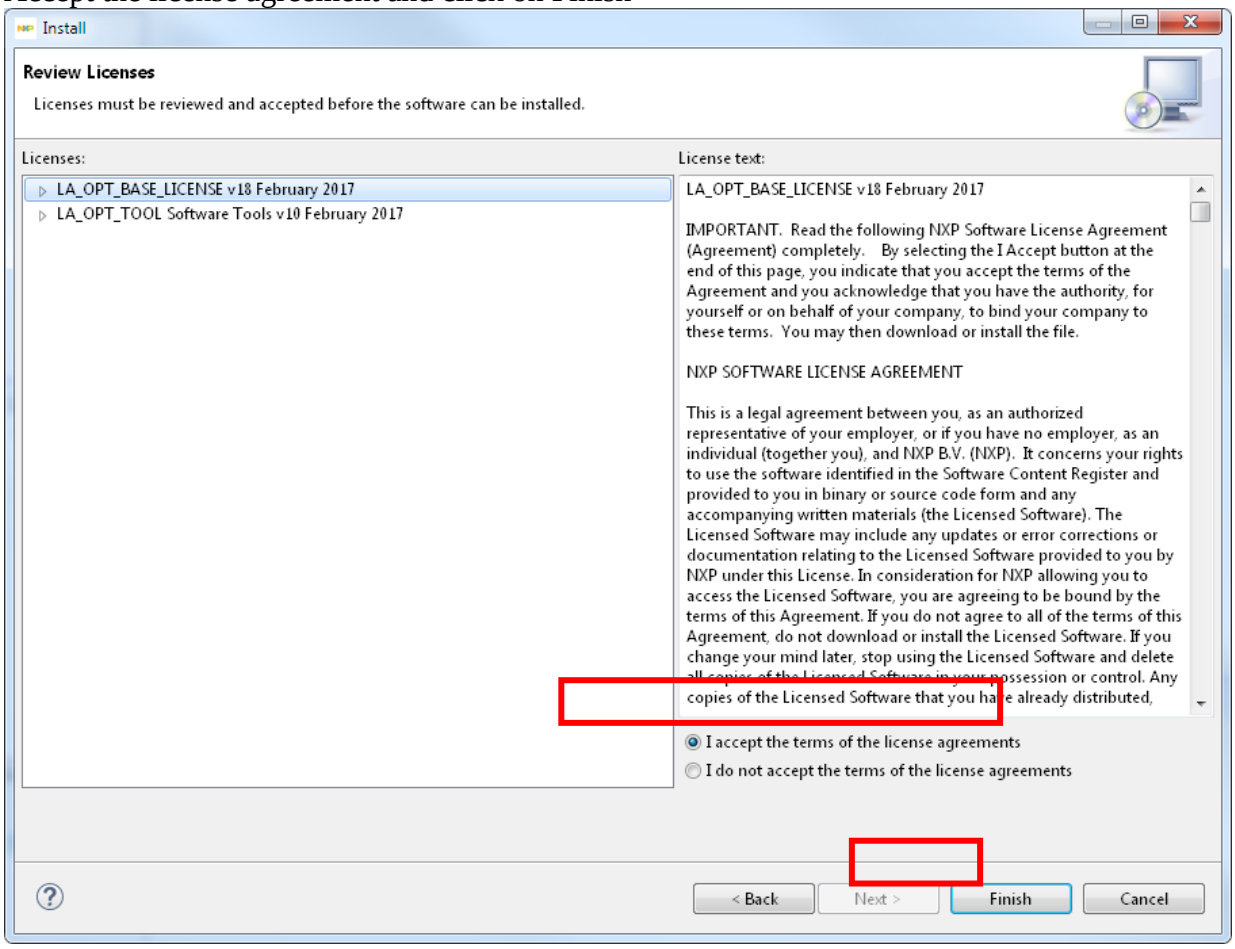
5. Click on Next



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

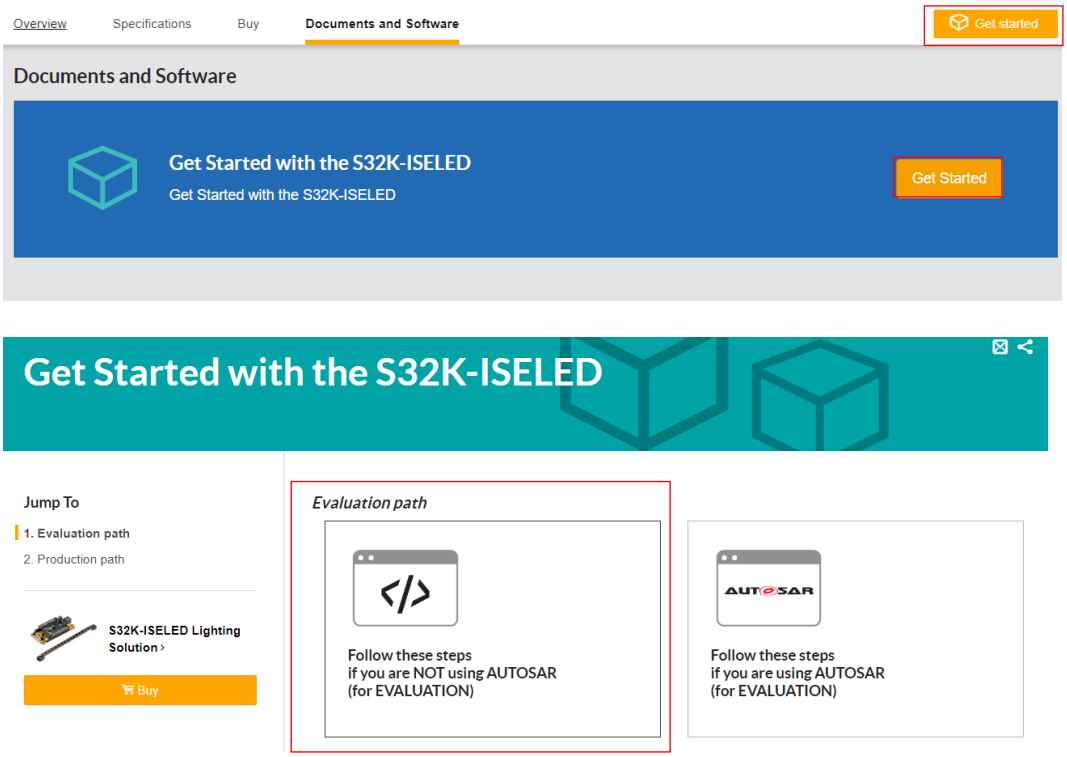


7. Wait for installation finish. Once the updates are installed, please proceed to the next stage, download and installation of the S32K SDK ISELED driver, described in next section.

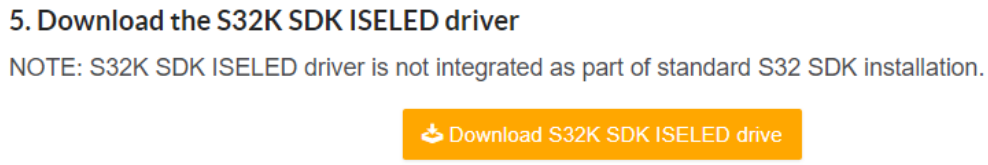
4. Installation of S32K SDK ISELED driver

The S32K SDK ISELED driver BETA 3.9.0 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:

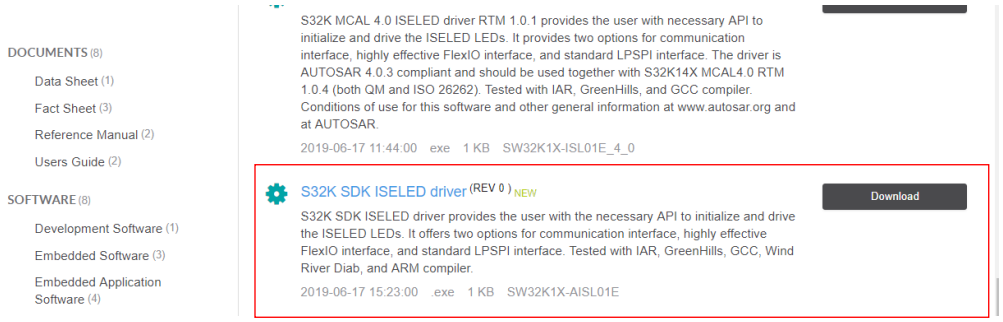
1. Visit www.nxp.com/S32K-ISELED web page
2. Click Get Started Tab and Choose Evaluation Path for Non-AUTOSAR



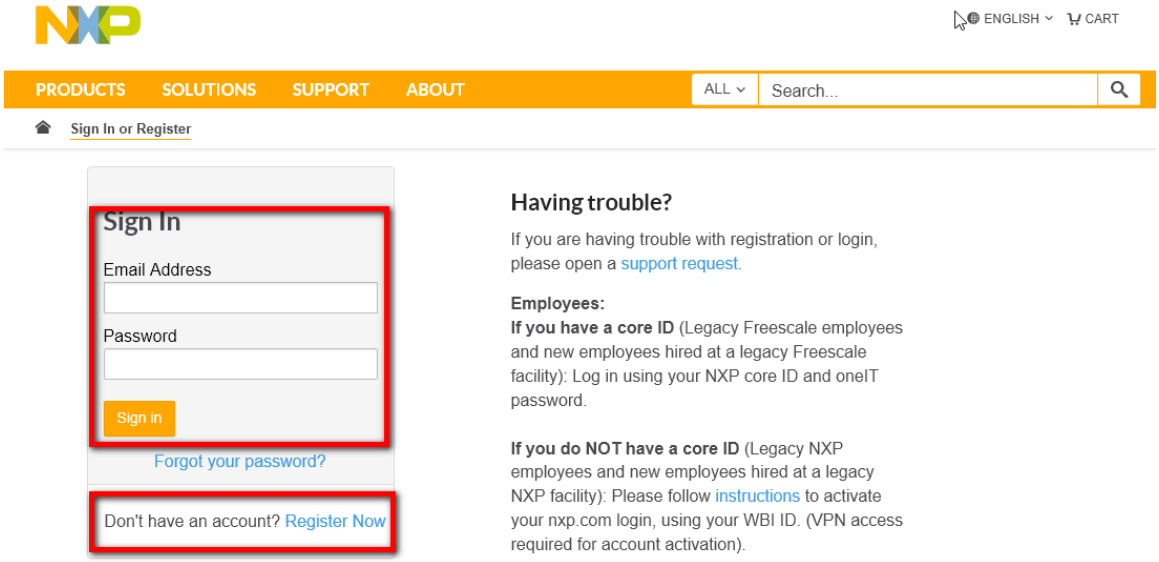
3. Download the S32K SDK ISELED driver.



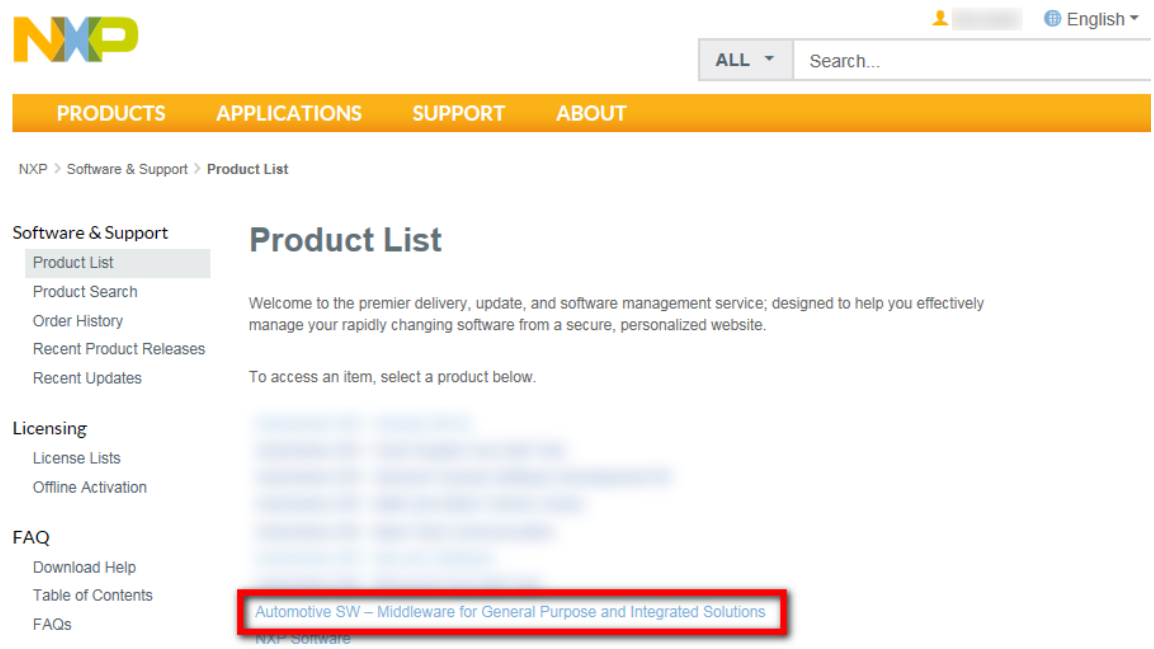
4. Alternatively, download link could also be found via www.nxp.com/S32K-ISELED Documents and Software Tab.



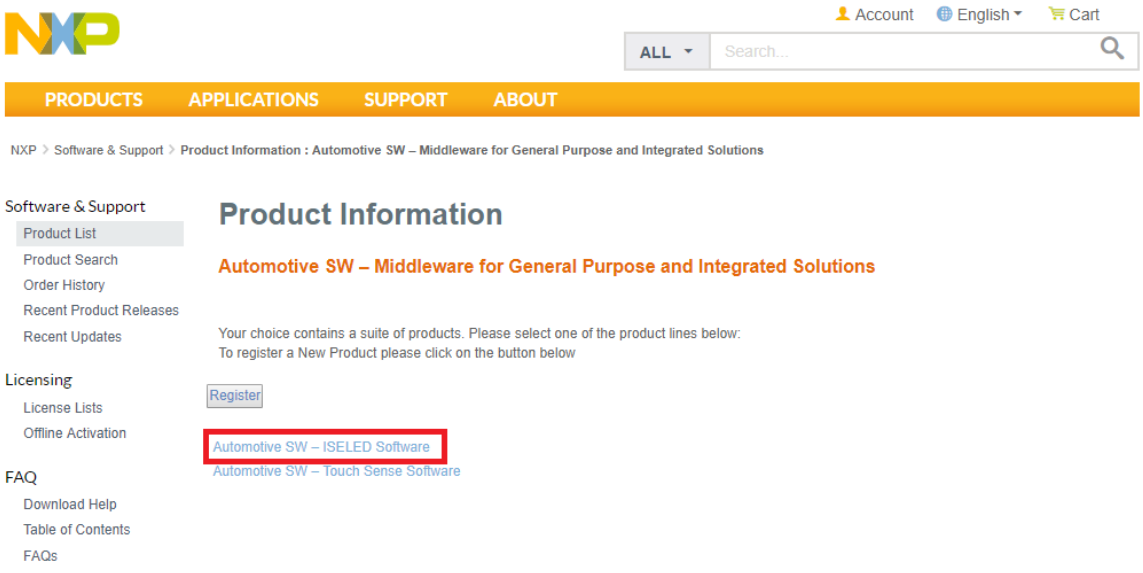
5. To proceed with the download, the user needs to be logged-in using the user account. In case of new user, please proceed with the Register Now option prior logging into the NXP web page.



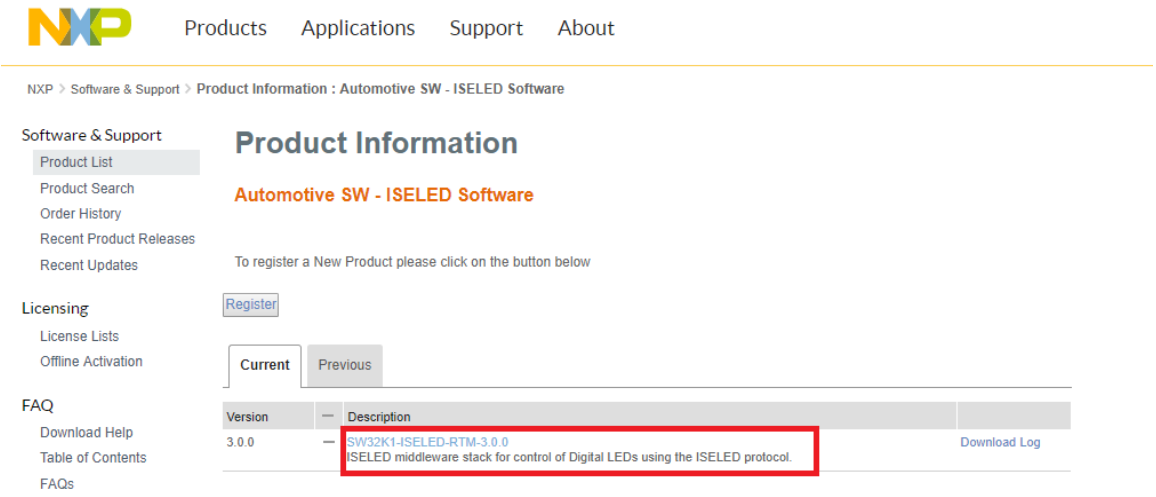
6. Select Automotive SW – Middleware for General Purpose and Integrated Solutions



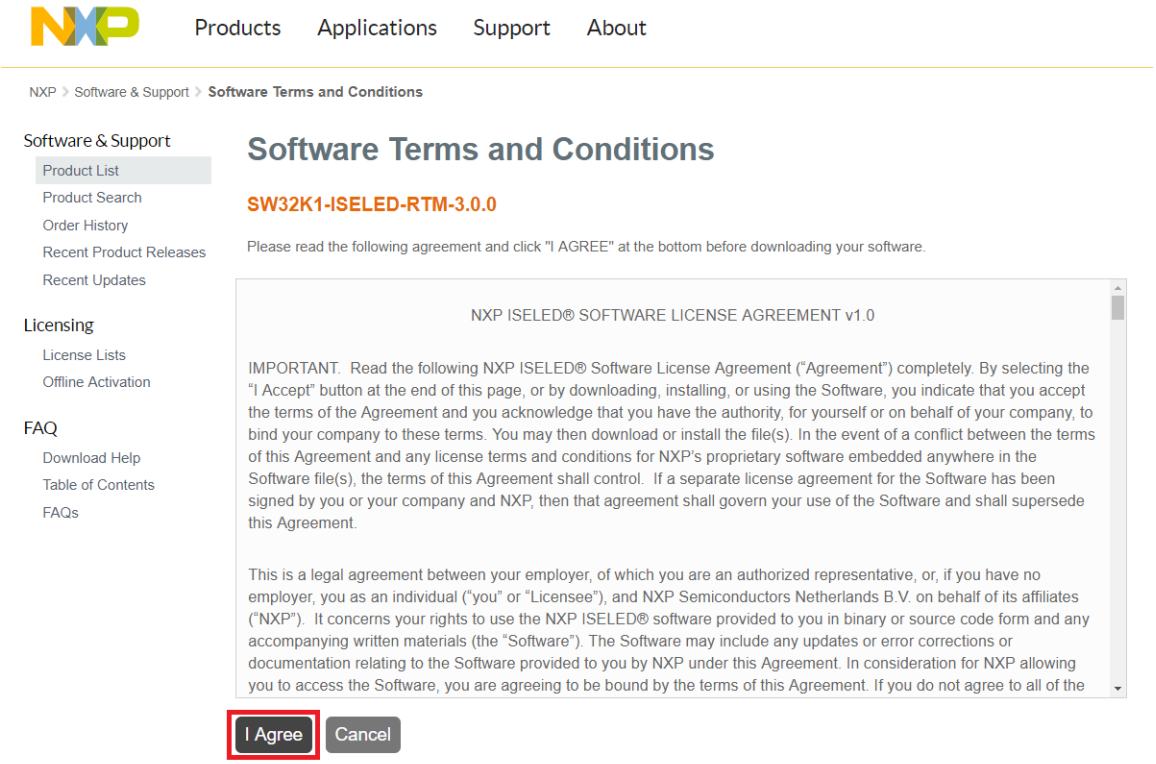
7. Select Automotive SW – ISELED Software



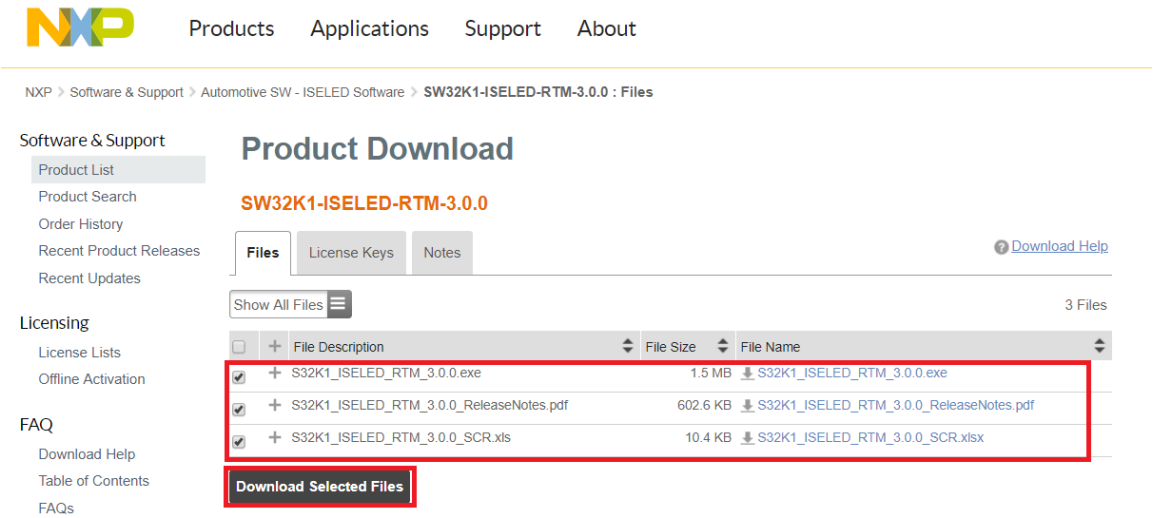
8. Select the SW32K1-ISELED-RTM-3.0.0 or newer package.



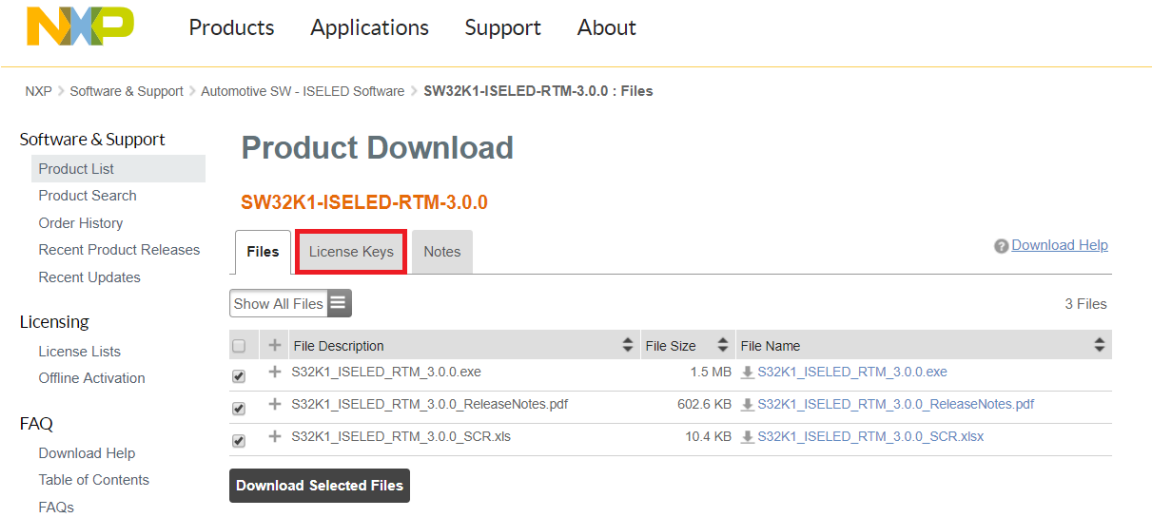
9. Accept the Software Terms and Conditions

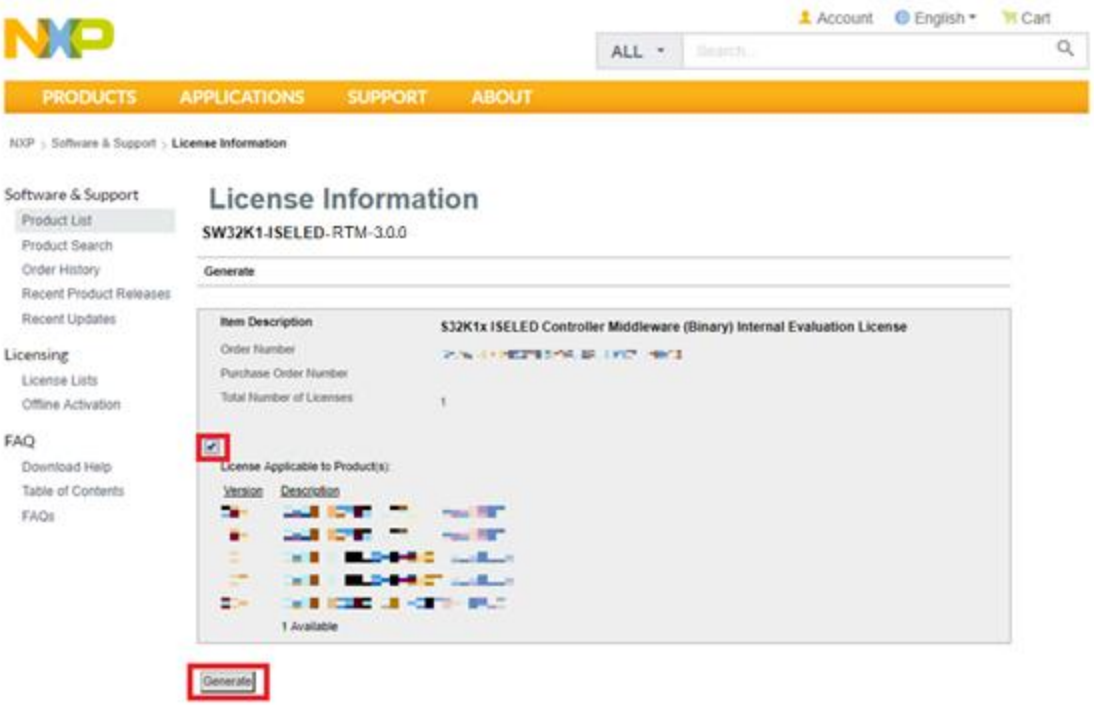


10. Download the SCR, Release notes and installation package by selecting the packages

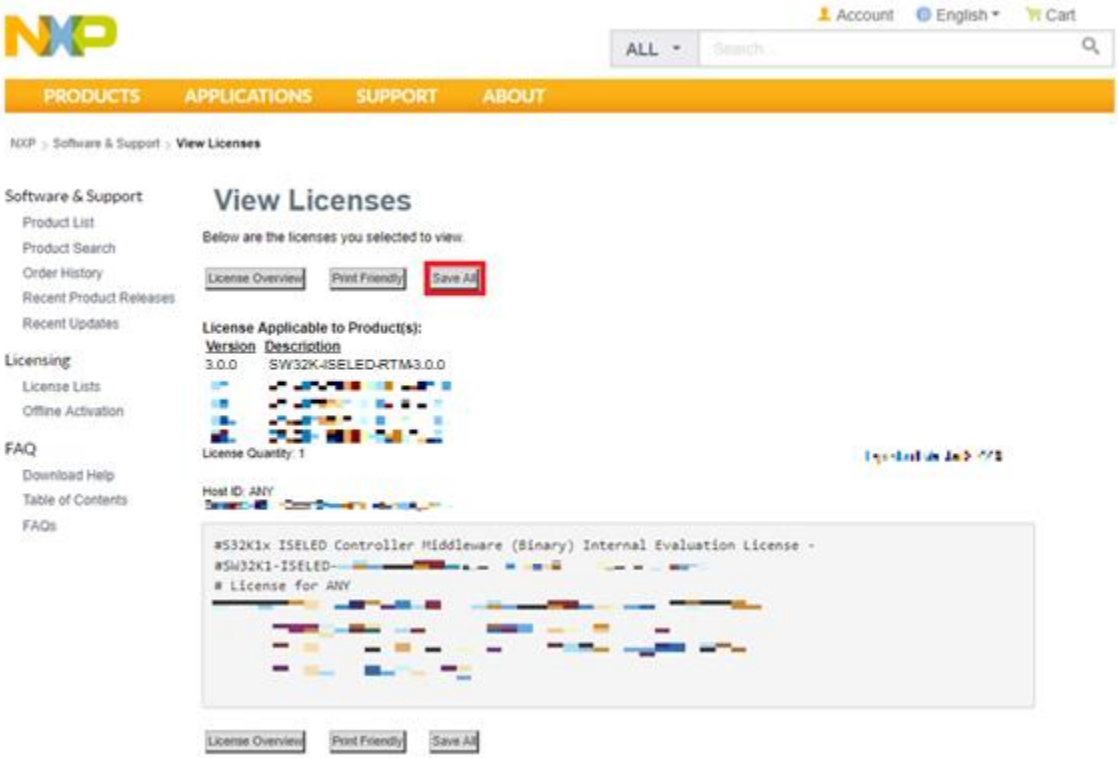


11. Generate the license file for the S32K SDK ISELED driver by selecting the License Keys tab.

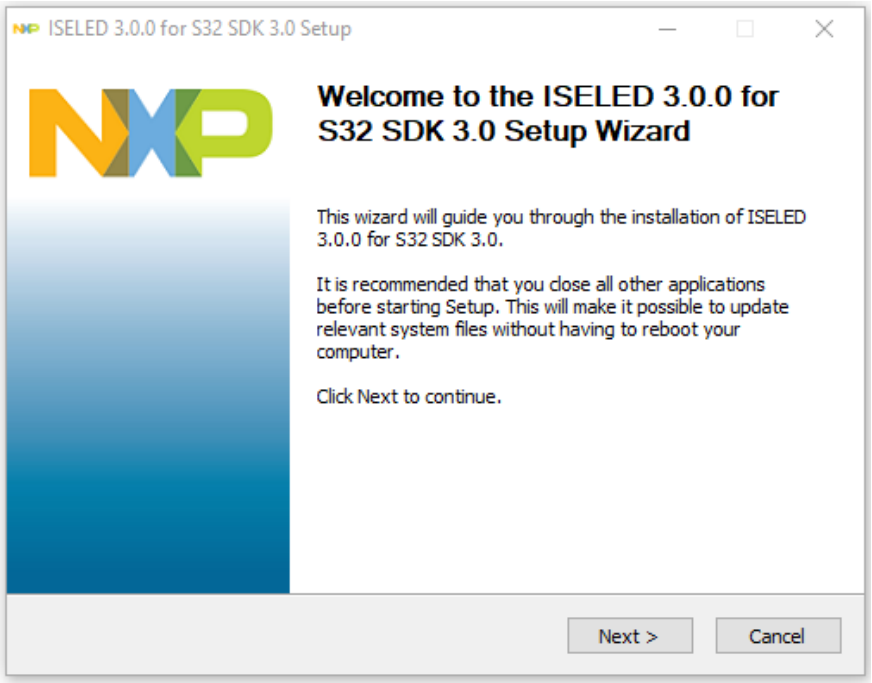




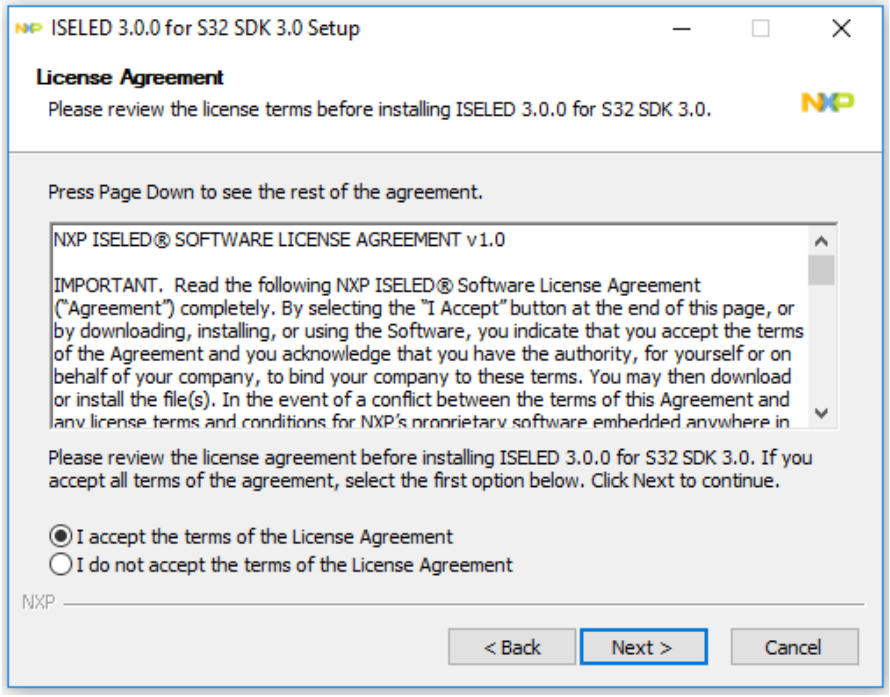
12. Store the license file on your computer. Use this license file during the installation of the NXP S32K ISELED Driver. Important: the S32SDK_S32K1xx_RTM_3.0.0 installation directory must be selected for the NXP S32K ISELED Driver installation.



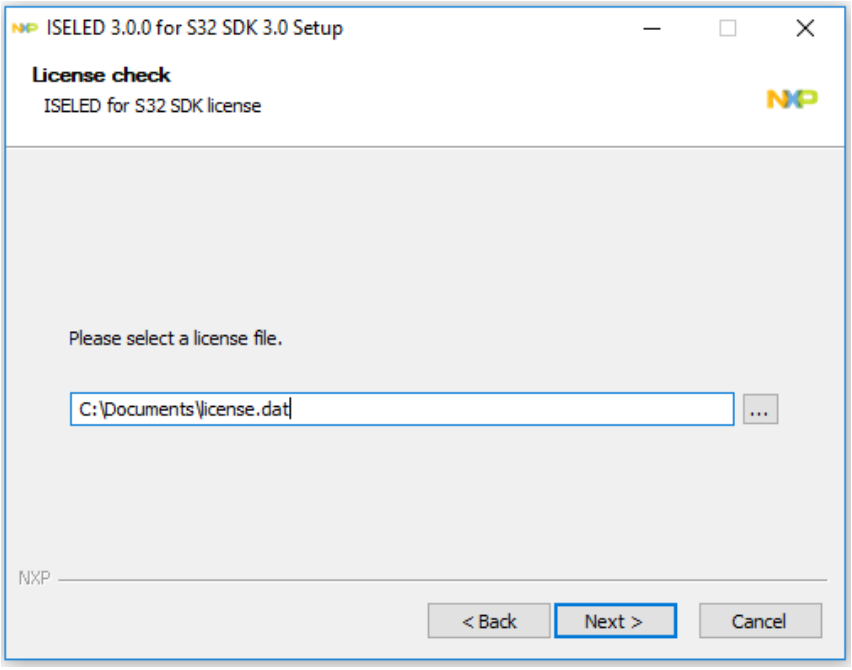
13. Run the ISELED Driver installer and click “Next”



14. Accept the terms of the License Agreement and continue

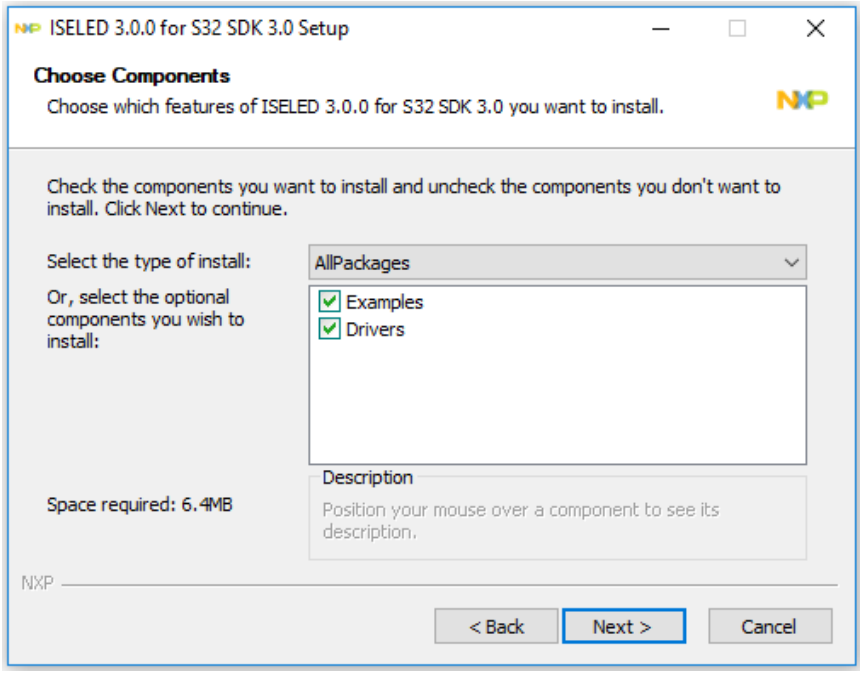


15. Select the license file that was saved previously

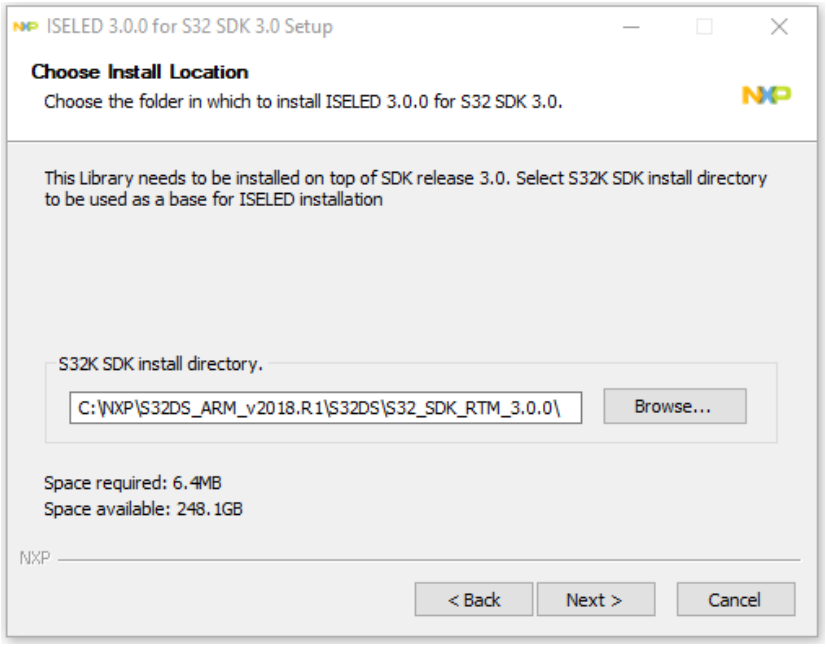


16. If the license expires, please contact gpis.software@nxp.com or your NXP sales representative and ask for an Activation Code to register the software

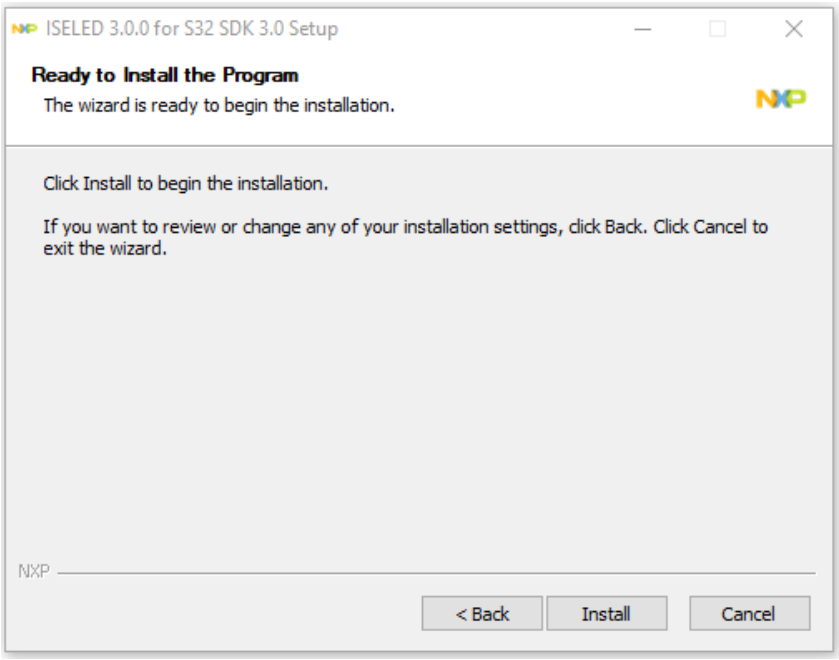
17. Select the components for the installation



18. Select the installation path. Make sure that the installation path is the same as the S32K SDK BETA 3.9.0 installation folder



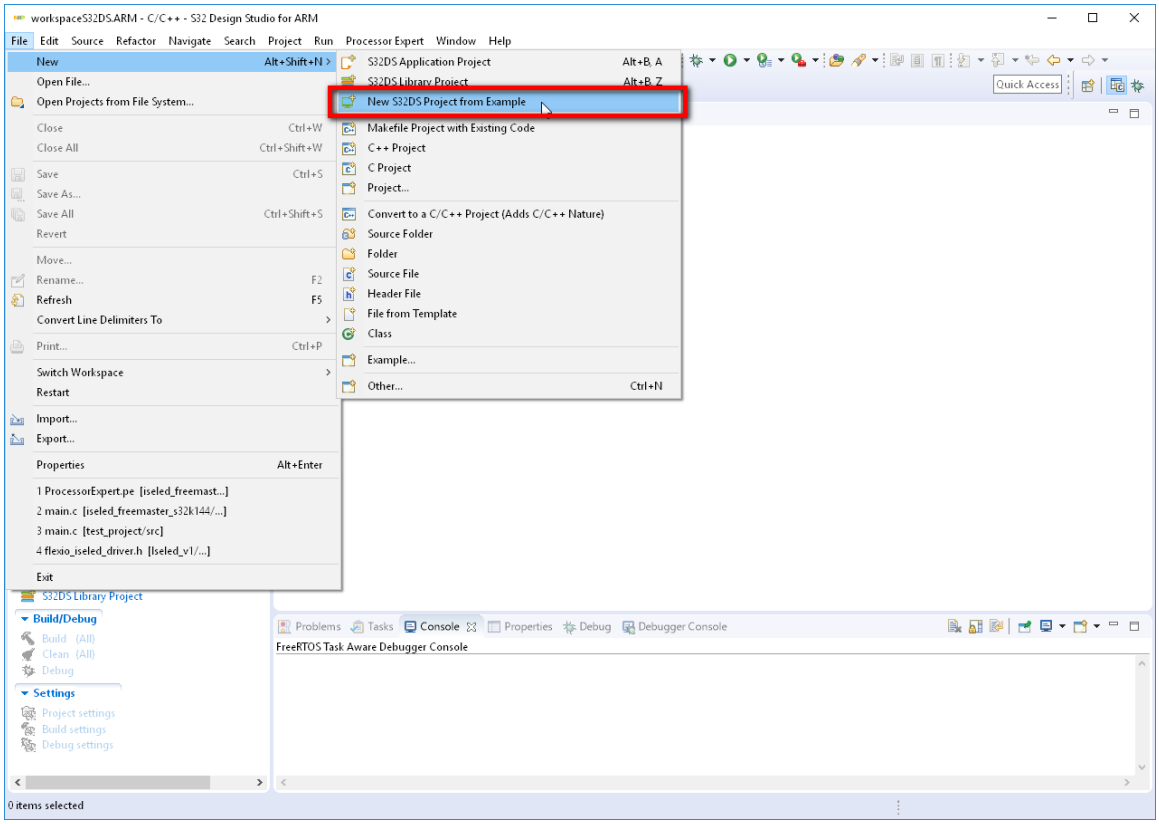
19. Finally click Install to start the setup



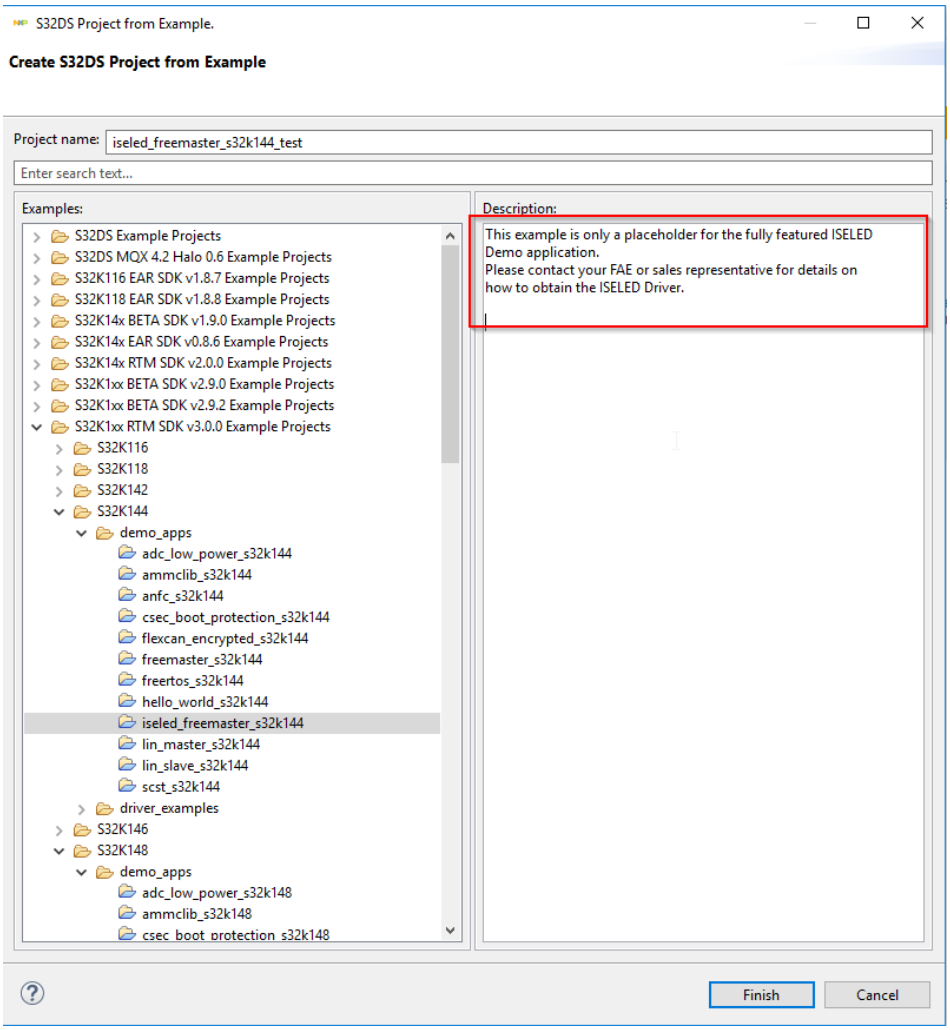
5. Troubleshooting

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

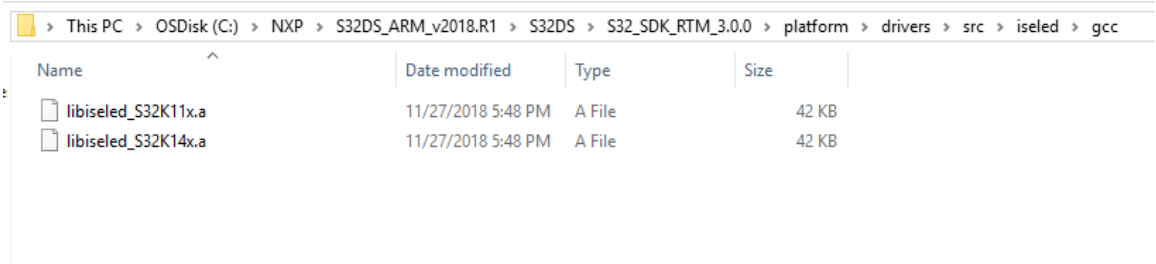
1. Start the S32 Design studio and select New S32DS Project from Example in File menu.



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 BETA 3.9.0 installation folder. Please see step 3.16.

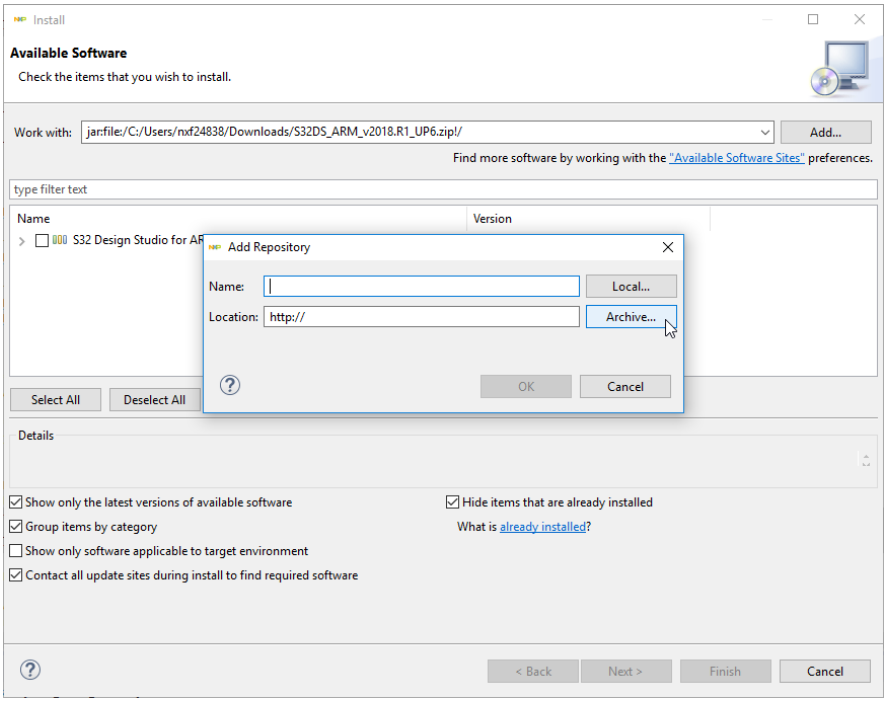


3. Another way to verify the ISELED Driver installation is to check if the ISELED libraries are present in the S32K SDK BETA 3.9.0 installation folder

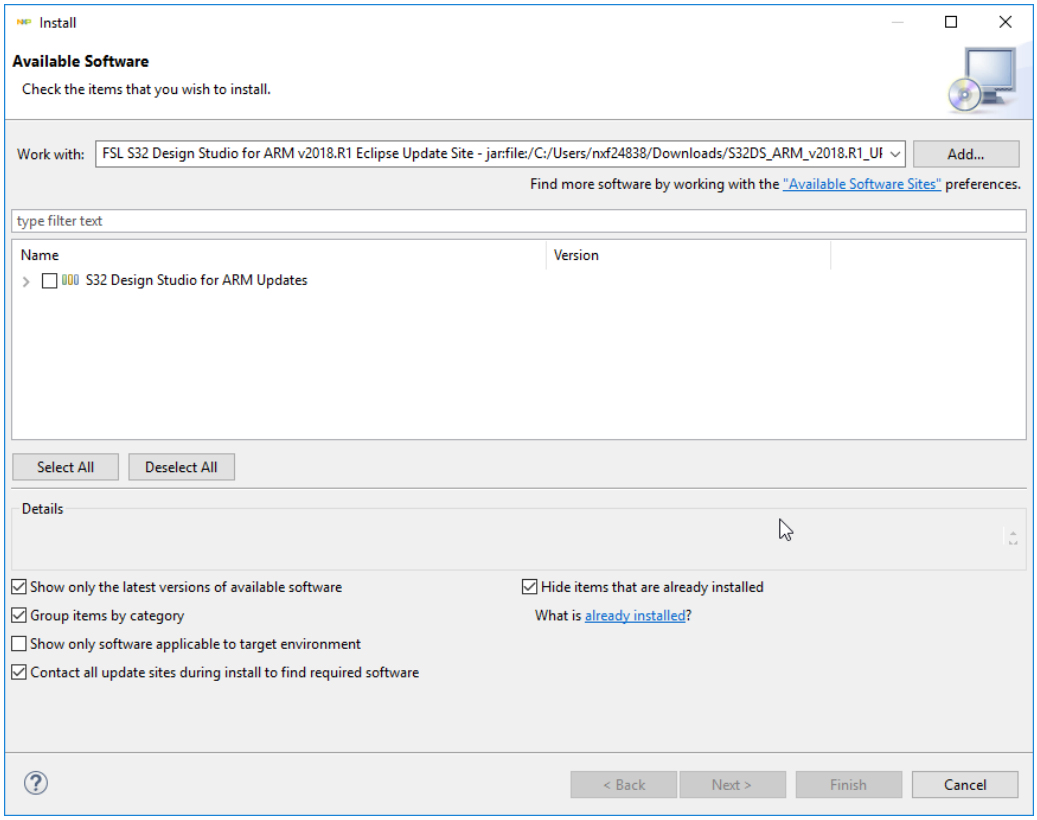


4. In the case that the S32DesignStudio - http://www.nxp.com/lgfiles/updates/Eclipse/S32DS_ARM_2018.R1/updatesite is not reachable, the SDK can be manually installed.
5. Download the update package from Updated/Patches (for ADM S32DS - https://www.nxp.com/support/developer-resources/run-time-software/s32-design-studio-ide/s32-design-studio-ide-for-arm-based-mcus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

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



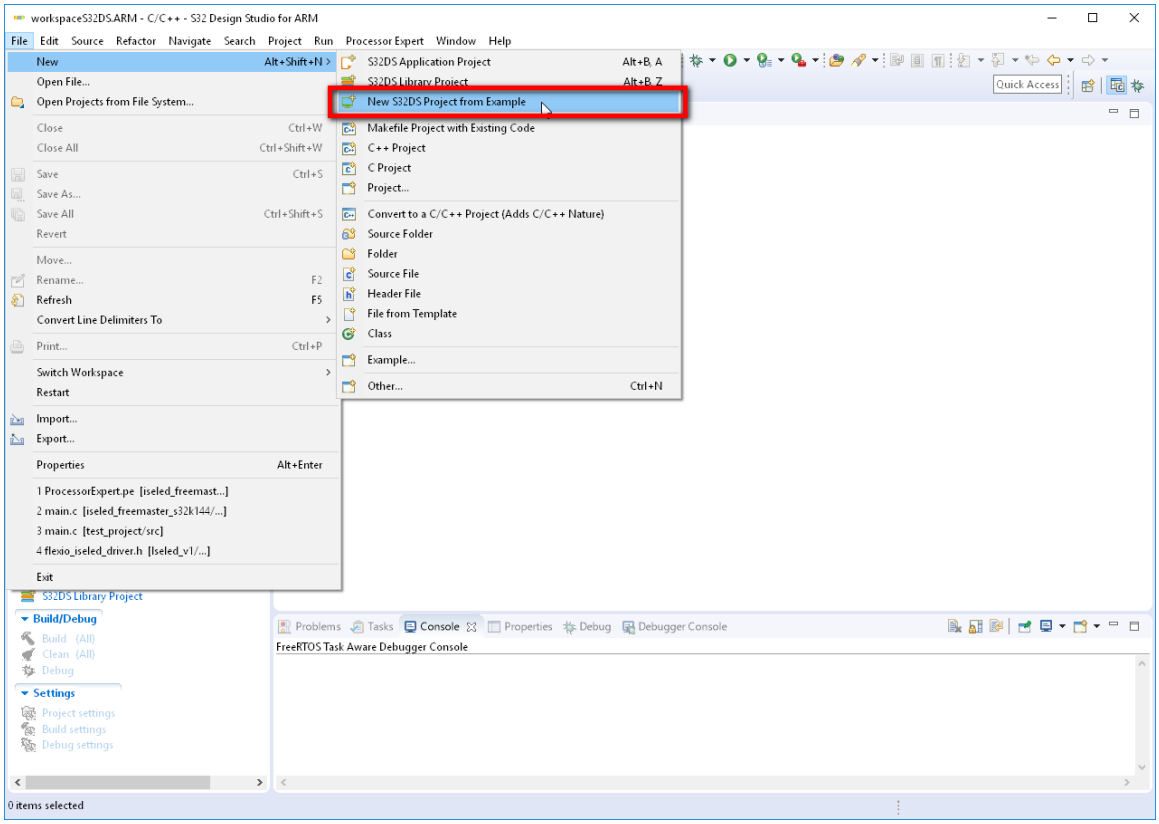
6. Starting from S32K SDK ISELED example application

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 website to download the installation package of the FreeMASTER component.

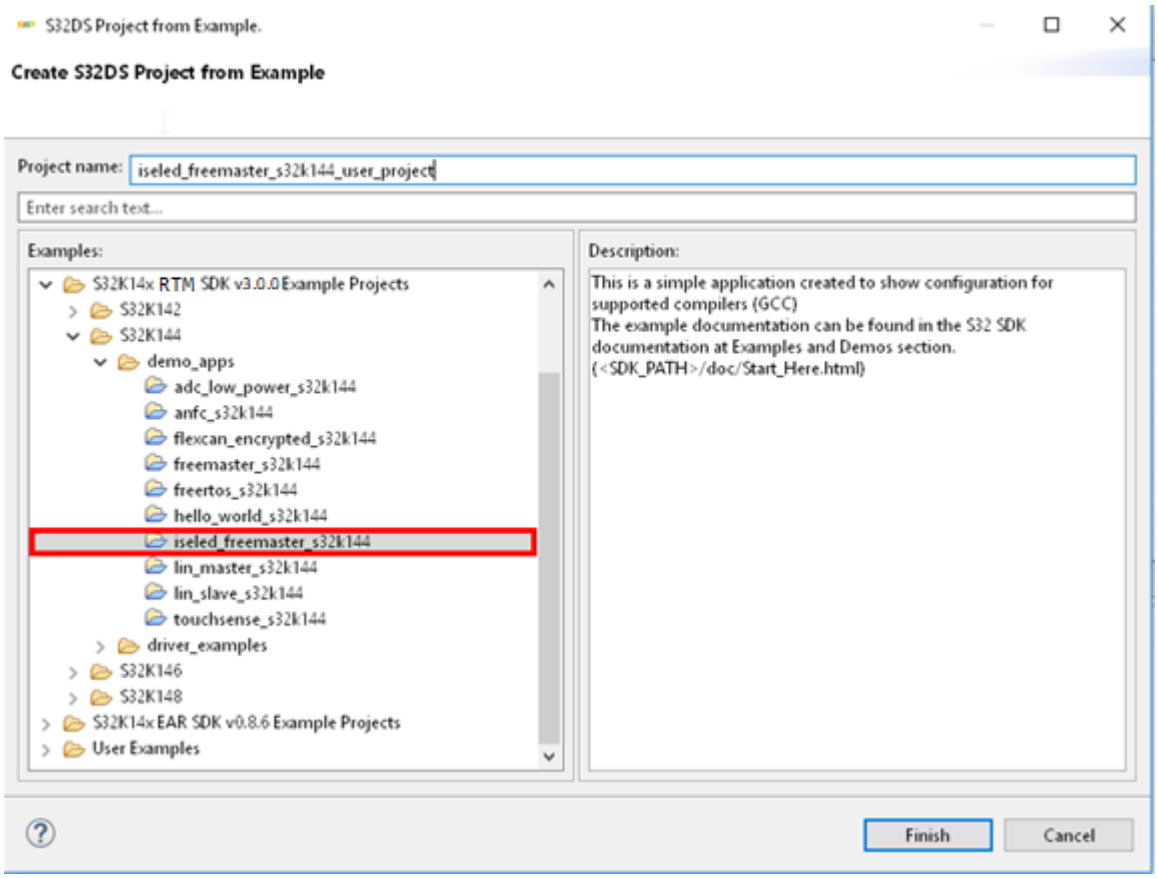
For a detailed description of the ISELED Driver example application, please refer to the ISELED_UserGuide document that can be found in the installation path under the “doc” folder.

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

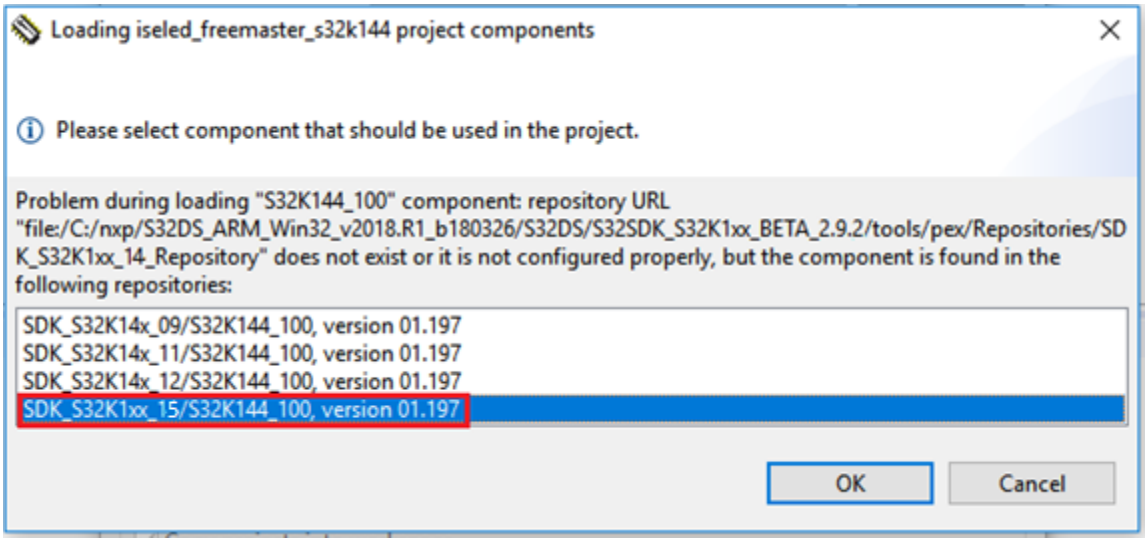
1. Start the S32 Design studio and select New S32DS Project from Example in File menu.

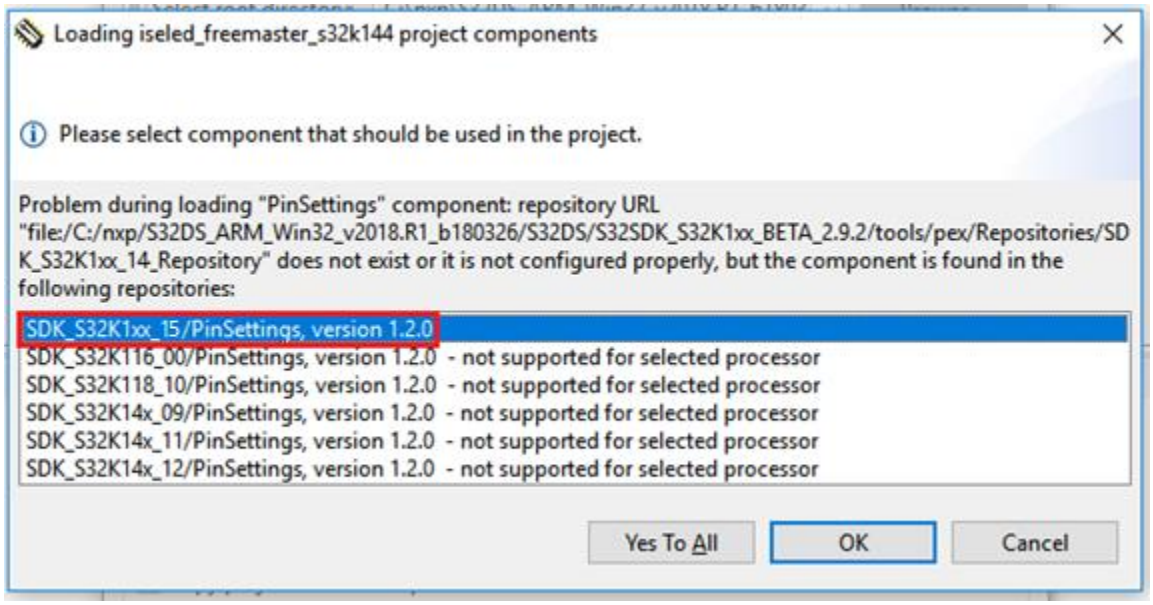


2. Select the iseled_freemaster_s32k144 example application from the S32K144 examples list.

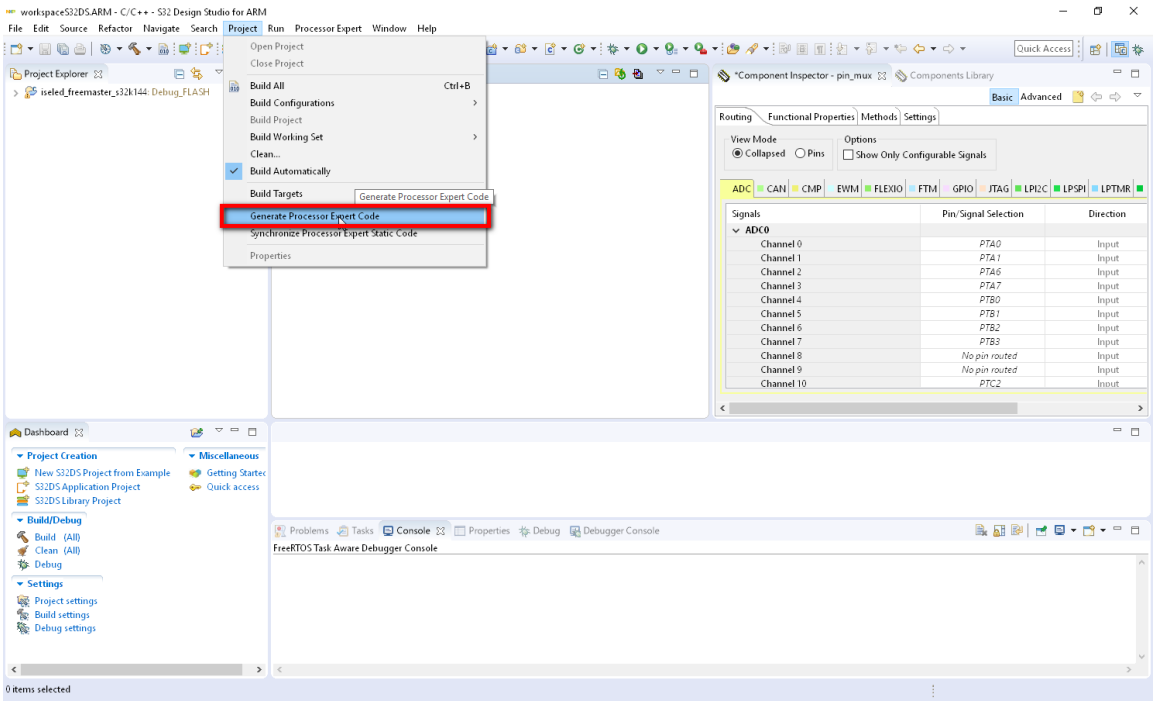


3. In case the pop-up window is displayed, select the SDK_S32K1xx_15 components repository.

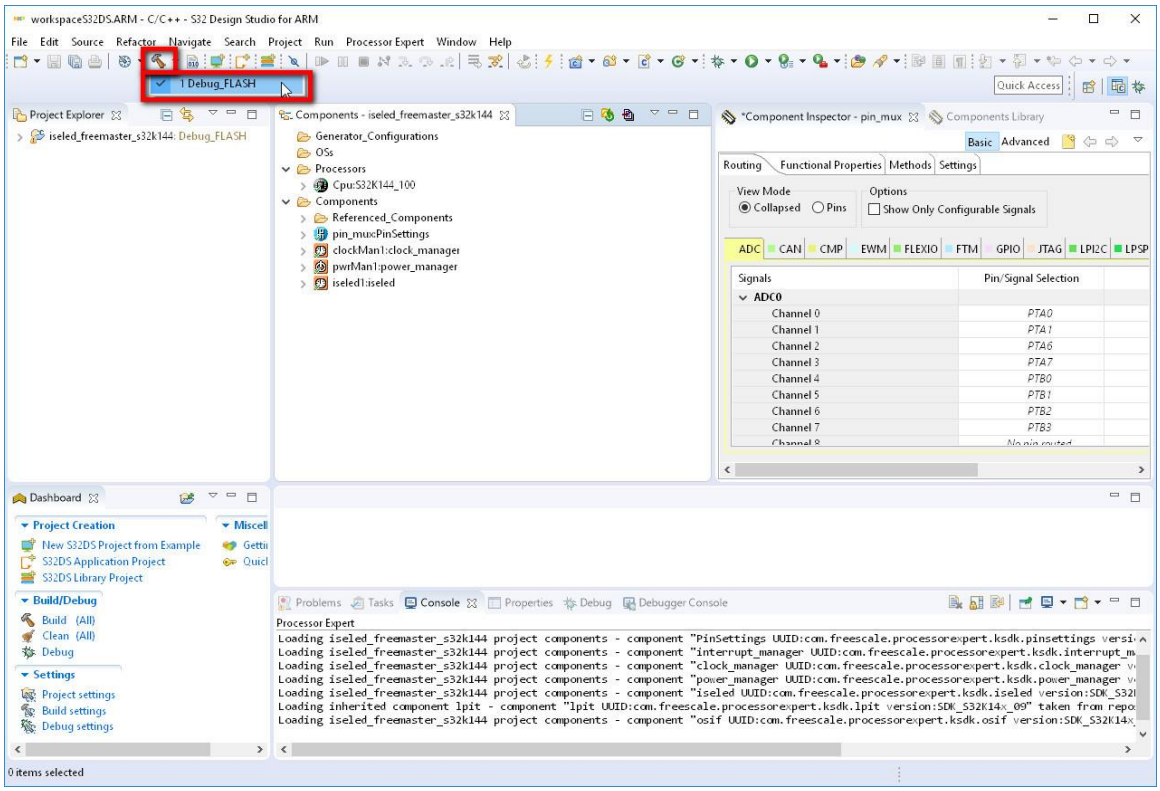




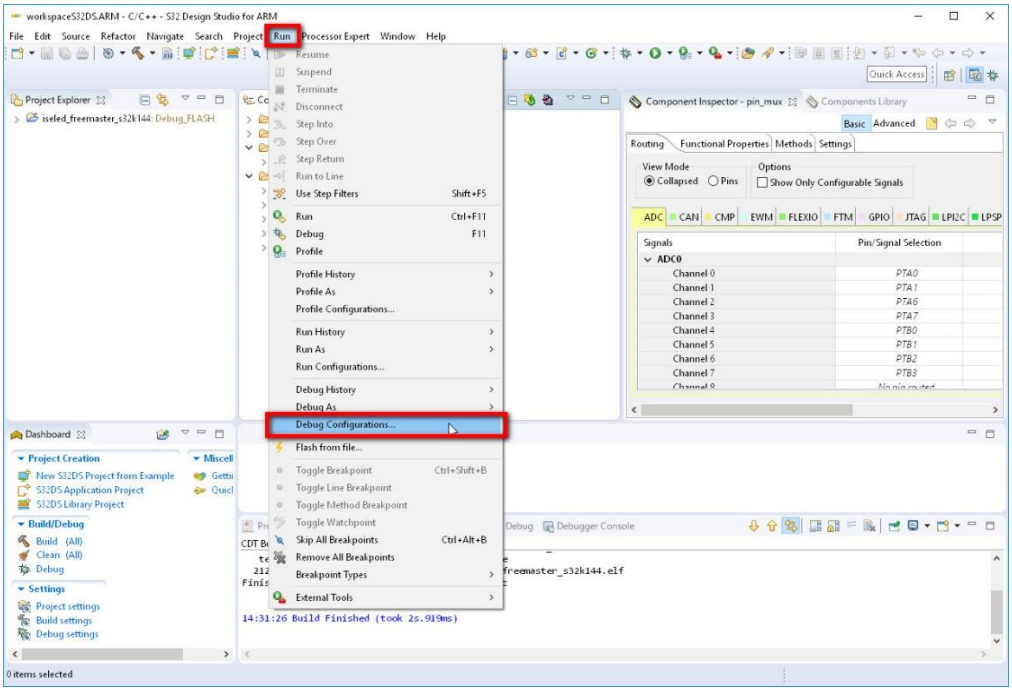
4. Generate the Processor Expert Code by selecting the option in Project menu and wait for the code generation to be completed before continuing.

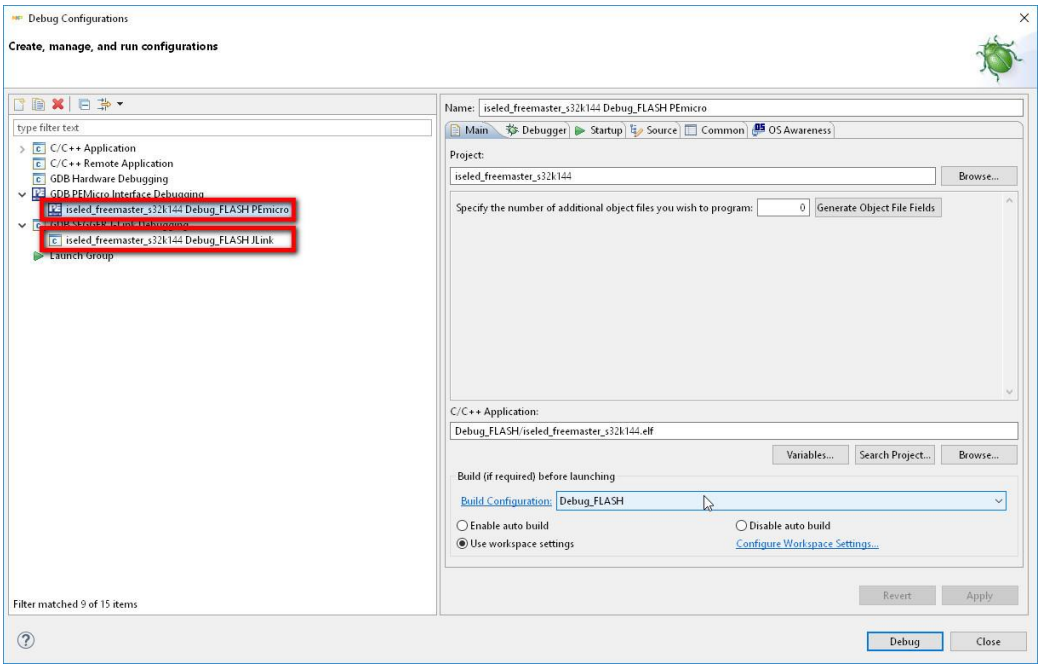


5. Build the project by selecting the build command from the menu bar and selecting the Debug_FLASH option.



6. 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 to download the installation of the FreeMASTER component.

How to Reach Us:

Home Page:
nxp.com

Web Support:
nxp.com/support

Information in this document is provided solely to enable system and software implementers to use NXP products. There are no express or implied copyright licenses granted hereunder to design or fabricate any integrated circuits based on the information in this document. NXP reserves the right to make changes without further notice to any products herein.

NXP makes no warranty, representation, or guarantee regarding the suitability of its products for any particular purpose, nor does NXP assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. “Typical” parameters that may be provided in NXP data sheets and/or specifications can and do vary in different applications, and actual performance may vary over time. All operating parameters, including “typicals,” must be validated for each customer application by customer’s technical experts. NXP does not convey any license under its patent rights nor the rights of others. NXP sells products pursuant to standard terms and conditions of sale, which can be found at the following address: nxp.com/SalesTermsandConditions.

While NXP has implemented advanced security features, all products may be subject to unidentified vulnerabilities. Customers are responsible for the design and operation of their applications and products to reduce the effect of these vulnerabilities on customer's applications and products, and NXP accepts no liability for any vulnerability that is discovered. Customers should implement appropriate design and operating safeguards to minimize the risks associated with their applications and products.

NXP, the NXP logo, NXP SECURE CONNECTIONS FOR A SMARTER WORLD, COOLFLUX, EMBRACE, GREENCHIP, HITAG, I2C BUS, ICODE, JCOP, LIFE VIBES, MIFARE, MIFARE CLASSIC, MIFARE DESFire, MIFARE PLUS, MIFARE FLEX, MANTIS, MIFARE ULTRALIGHT, MIFARE4MOBILE, MIGLO, NTAG, ROADLINK, SMARTLX, SMARTMX, STARPLUG, TOPFET, TRENCHMOS, UCODE, Freescale, the Freescale logo, AltiVec, C 5, CodeTEST, CodeWarrior, ColdFire, ColdFire+, C Ware, the Energy Efficient Solutions logo, Kinetis, Layerscape, MagniV, mobileGT, PEG, PowerQUICC, Processor Expert, QorIQ, QorIQ Qonverge, Ready Play, SafeAssure, the SafeAssure logo, StarCore, Symphony, VortiQa, Vybrid, Airfast, BeeKit, BeeStack, CoreNet, Flexis, MXC, Platform in a Package, QUICC Engine, SMARTMOS, Tower, TurboLink, and UMEMS are trademarks of NXP B.V. All other product or service names are the property of their respective owners. ARM, AMBA, ARM Powered, Artisan, Cortex, Jazelle, Keil, SecurCore, Thumb, TrustZone, and µVision are registered trademarks of ARM Limited (or its subsidiaries) in the EU and/or elsewhere. ARM7, ARM9, ARM11, big.LITTLE, CoreLink, CoreSight, DesignStart, Mali, mbed, NEON, POP, Sensinode, Socrates, ULINK and Versatile are trademarks of ARM Limited (or its subsidiaries) in the EU and/or elsewhere. All rights reserved. Oracle and Java are registered trademarks of Oracle and/or its affiliates. The Power Architecture and Power.org word marks and the Power and Power.org logos and related marks are trademarks and service marks licensed by Power.org.

Document Number: S32KSDKISELEDRTMUG
Rev. 1
09/2019