S32K SDK ISELED driver installation guide

This document describes in detail the steps to install the necessary components to build the customer application using the NXP S32K SDK ISELED 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.

Contents

1. 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:

1.1. Visit the www.nxp.com/s32ds and download Design Studio v3.3 (or newer) for S32 Platform:

Software Versions	Supported Products	Configuration	Integrated NXP Software	Compilers	Debuggers	Dedicated Tools
S32DS for S32 Platform	S32V, S32S, and S32 Platform devices	Integrated NXP Tools: • S32 Flash • DDR stress Integrated Configuration Tools: • S32 Configuration • Pins Wizard • Clocks configuration • Peripheral / Drivers configuration • DCD/IVT configuration • DDR configuration	• S32 SDK • FreeRTOS • AMMCLib for S32V23x • Vision SDK • Linux BSP	• NXP GCC 6.3.1* • Green Hills • IAR	Built-in GDB interface: • S32 Debugger + S32 Debug Probe • P&E • Multilink / Cyclone / Open SDA Lauterbach supported	Vision: • NXP APU Compiler • ISP Assembler • ISP and APEX graph tools

IDE and Build Tools (2)

S32 Design Studio 3.3 – Windows/Linux^(REV 3.3)

🌐 FLEXERA 1 KB S32DS-3-3

2020-06-22 13:28:00

DOWNLOAD

S32 Design Studio 3.2 – Windows/Linux^(REV 3.2)

🌐 FLEXERA 1 KB S32DS_3.2

2019-09-27 15:18:00

DOWNLOAD

1.2. 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.
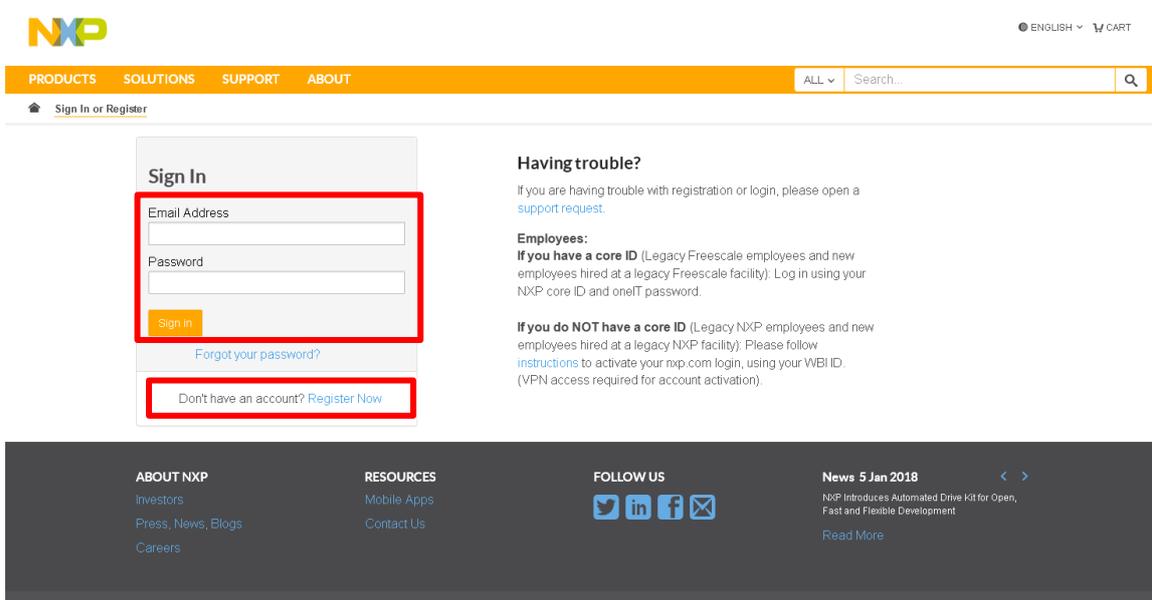
1.3. Download the installation package of S32 Design Studio by selecting the 3.3 version, based on the operation system on your PC. After download, follow the instruction of the Installation shield to proceed.

Product Download

S32 Design Studio version v.3.3

| Files | License Keys | Notes |

Show All Files   6 Files

	File Description	File Size	File Name
+	S32 Desgin Studio 3.3 release notes	196.3 KB	S32DS_Release_Notes_3.3.0.pdf
+	S32 Design Studio 3.3 development packages for offline use	2.8 GB	S32DS3.3.0_D2006.zip
+	S32 Design Studio 3.3 installation for Linux	1 GB	S32DS3.3_linux_D2006.bin
+	S32 Design Studio 3.3 installation for Windows	1.4 MB	S32DS3.3_win_D2006.exe
+	S32 Design Studio 3.3 Installation guide	1.2 MB	S32DS_Installation_Guide_3.3.0.pdf
+	S32 Design Studio 3.3 S32K1xx development package for offline use	2.2 GB	S32DS.S32K1.3.3.0_D2006.zip

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

Product Download

S32 Design Studio version v.3.3

| Files | License Keys | Notes |

Show All Files   6 Files

	File Description	File Size	File Name
+	S32 Desgin Studio 3.3 release notes	196.3 KB	S32DS_Release_Notes_3.3.0.pdf
+	S32 Design Studio 3.3 development packages for offline use	2.8 GB	S32DS3.3.0_D2006.zip
+	S32 Design Studio 3.3 installation for Linux	1 GB	S32DS3.3_linux_D2006.bin
+	S32 Design Studio 3.3 installation for Windows	1.4 GB	S32DS3.3_win_D2006.exe
+	S32 Design Studio 3.3 Installation guide	1.2 MB	S32DS_Installation_Guide_3.3.0.pdf
+	S32 Design Studio 3.3 S32K1xx development package for offline use	2.2 GB	S32DS.S32K1.3.3.0_D2006.zip

License Information

S32 Design Studio version v.3.3

View

Item Description	S32 Design Studio version v.3.3
Order Number	S32DS-3-3_114371747
Purchase Order Number	
Total Number of Licenses:	101
Activation Code	██████████

License Applicable to Product(s):

Version	Description
3.3	S32 Design Studio version v.3.3 (View EULA)
	100 Available

License Quantity: 1
Fulfillment ID: 175413747
Expiration Date: Jul 15, 2024
Product: S32 Design Studio version v.3.3
Machine: ██████████
Activation Code: ██████████

☑

View

View Licenses

Below are the licenses you selected to view.

License Overview   Print Friendly   Save All

License Applicable to Product(s):

Version	Description
3.3	S32 Design Studio version v.3.3

License Quantity: 1
Fulfillment ID: ██████████
Expiration Date: Jul 15, 2024
Product: S32 Design Studio version v.3.3
Machine: ██████████
Activation Code: ██████████

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.
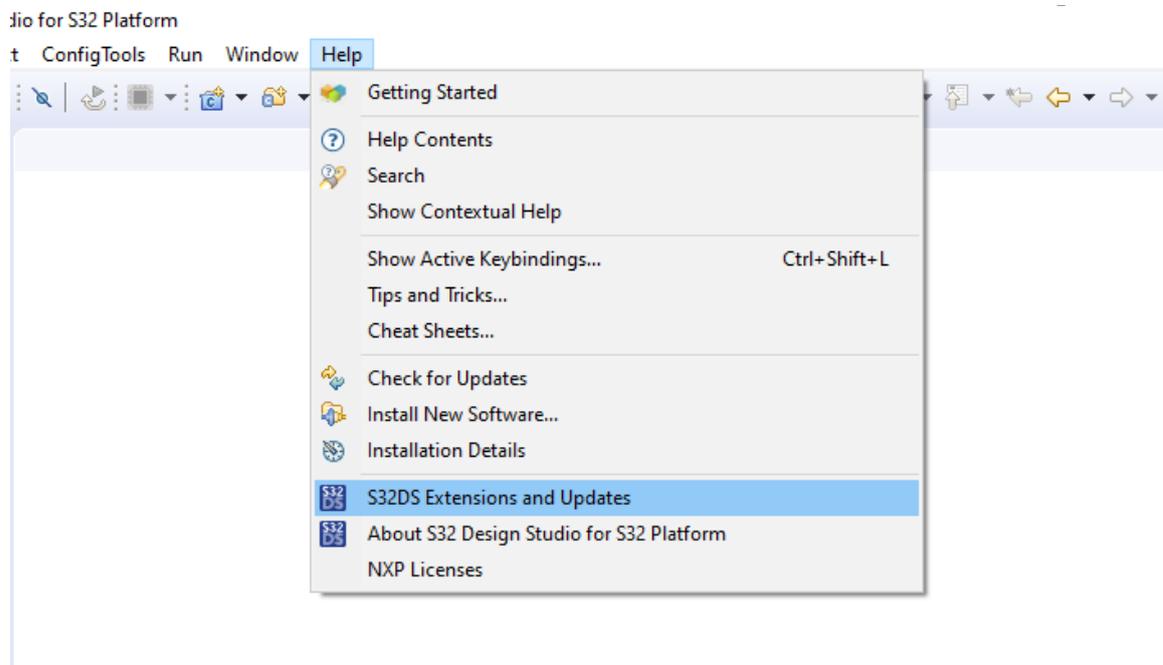
2. Updating the S32 Software Development Kit

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 4.0.0, the following steps need to be proceed in order to update to S32K SDK, revision RTM 4.0.0:

2.1   Run the S32K Design studio

2.2   Select Help->Extensions and updates

dio for S32 Platform

t ConfigTools Run Window **Help**

Getting Started

Help Contents

Search

Show Contextual Help

Show Active Keybindings...   Ctrl+Shift+L

Tips and Tricks...

Cheat Sheets...

Check for Updates

Install New Software...

Installation Details

S32DS Extensions and Updates

About S32 Design Studio for S32 Platform

NXP Licenses
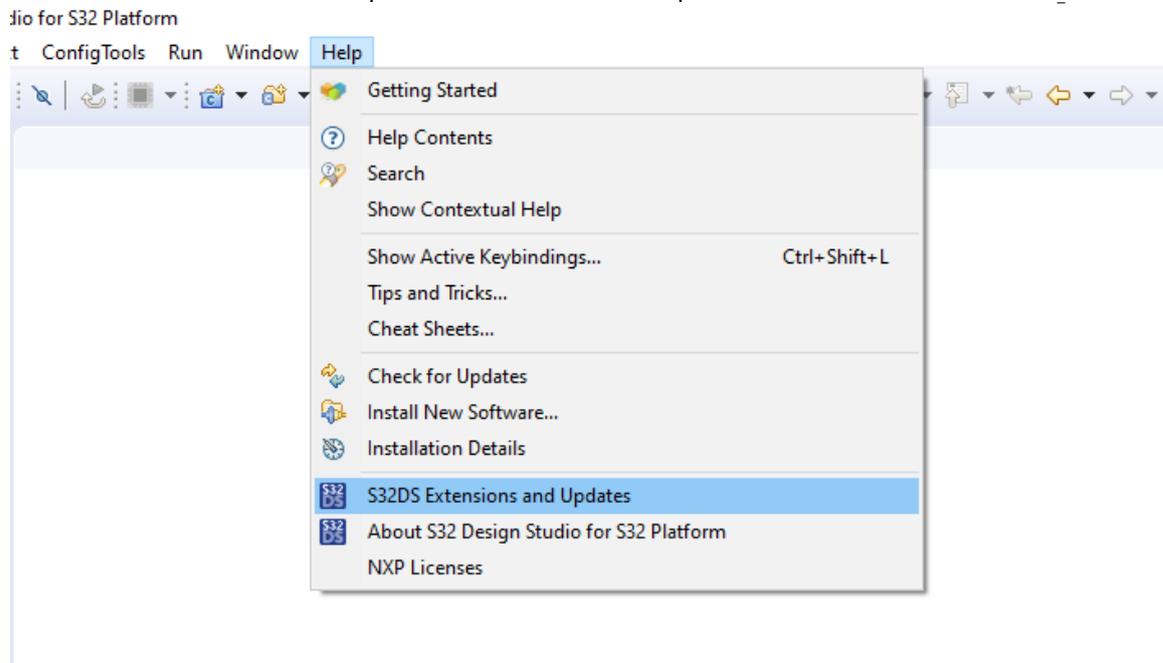
2.3 Select and install S32SDK S32K1XX RTM 4.0.0

2.4 The next dialog will appear
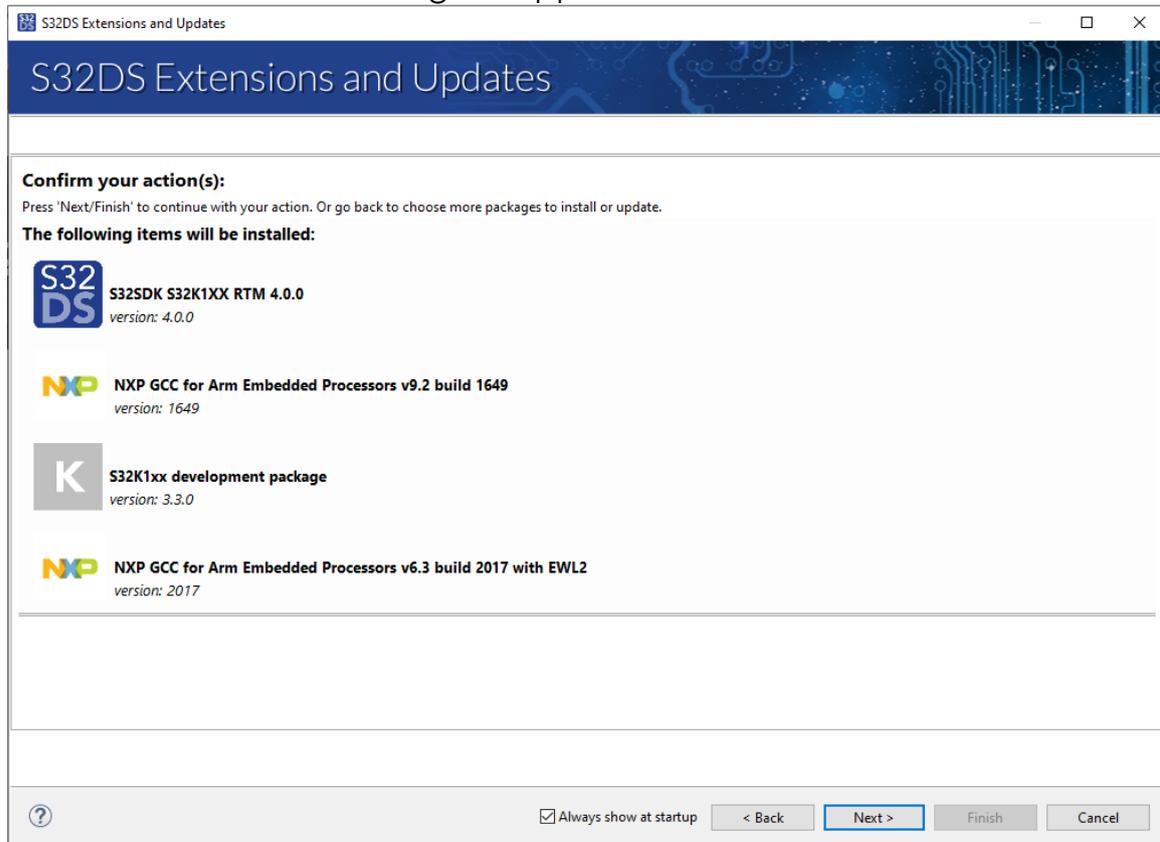
2.5 Click on Next

Note: The list of available packages may differ as new support is added. Please select all S32SDK S32K1xx RTM_4.0.0 related packages in the list above.

2.6 Accept the license agreement and click on Finish
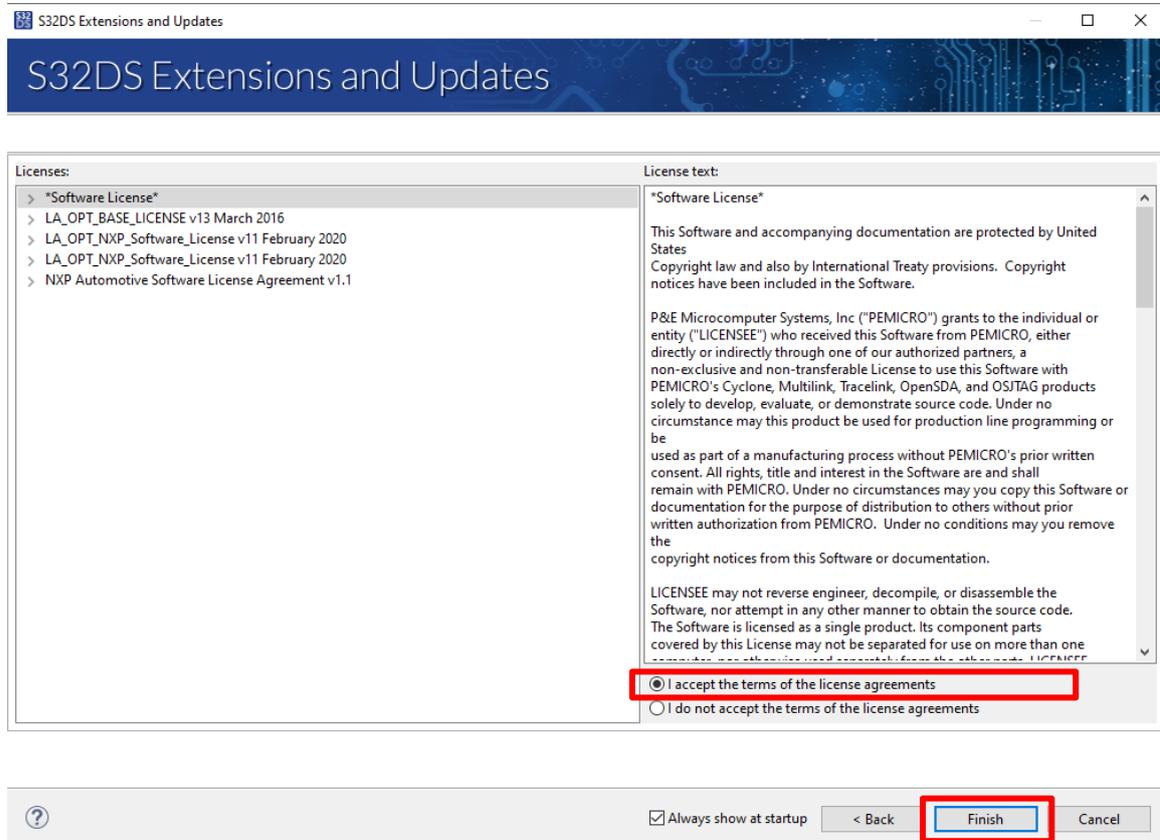
2.7 Wait for installation finish. Once the updates are installed, please proceed to the next stage, download and installation of the S32K SDK ISELED driver, described in next section.

3. Installation of S32K SDK ISELED driver

The S32K SDK ISELED driver EAR 4.8.0 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 special activation code is needed to download the installation package from NXP web. Please follow the instructions to proceed:

3.1 Contact gpis.software@nxp.com or your NXP Sales representative to get an Activation Code to register for the Software.

3.2 Visit www.nxp.com/activation web page and log in using your NXP web account. In case you do not have the NXP web account, please proceed with the registration first.

Software and Support Activation

Product

Enter Registration Code

[   ] **Register Product**

Example:
CWP-PRO-NL_1-387604471

3.3 Once the activation of the S32K SDK ISELED driver is done, please navigate to My account option under your login name.
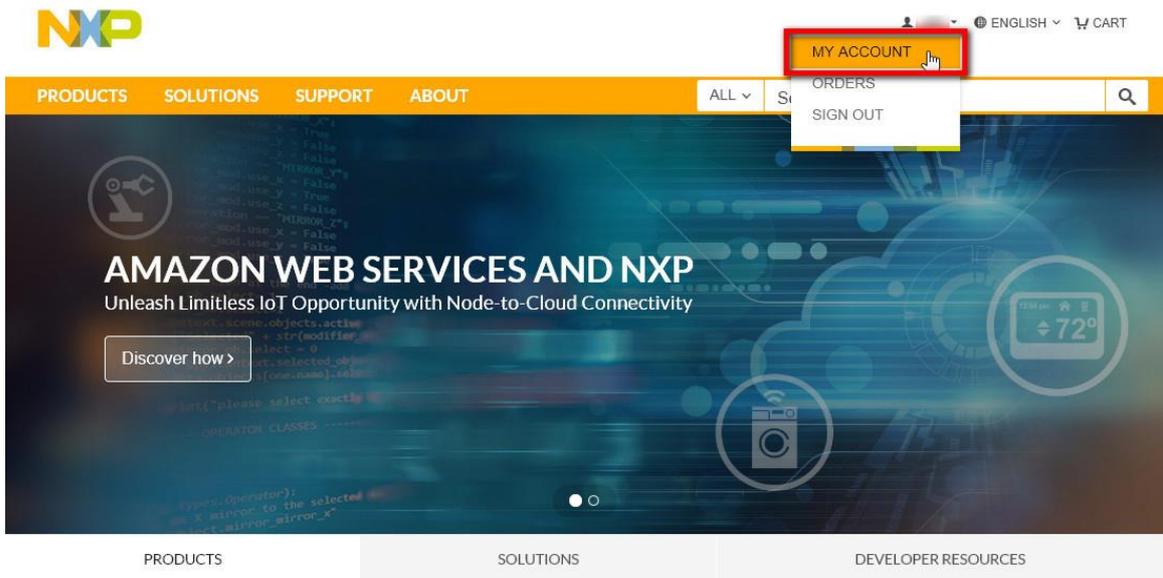
3.4   Select the Software Licensing and Support option.

3.5 Select Automotive SW – Middleware for General Purpose and Integrated Solutions

3.6 Select Automotive SW – ISELED Software

3.7   Select the SW32K1-ISELED-EAR-4.8.0 or newer package. Below is an example screenshot for RTM 3.0.0, a previous release.

3.8 Accept the Software Terms and Conditions

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

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

3.11   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_4.0.0 installation directory must be selected for the NXP S32K ISELED Driver installation.

3.12 Run the ISELED Driver installer and click "Next"

NXP ISELED 4.8.0 for S32 SDK 4.0 Setup

Welcome to the ISELED 4.8.0 for S32 SDK 4.0 Setup Wizard

This wizard will guide you through the installation of ISELED 4.8.0 for S32 SDK 4.0.

It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.

Click Next to continue.

Next >   Cancel

3.13 Accept the terms of the License Agreement and continue

ISELED 4.8.0 for S32 SDK 4.0 Setup

License Agreement
Please review the license terms before installing ISELED 4.8.0 for S32 SDK 4.0.

Press Page Down to see the rest of the agreement.

NXP ISELED® SOFTWARE LICENSE AGREEMENT v1.1

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

Please review the license agreement before installing ISELED 4.8.0 for S32 SDK 4.0. If you accept all terms of the agreement, select the first option below. Click Next to continue.

◉ I accept the terms of the License Agreement
○ I do not accept the terms of the License Agreement

NXP

[< Back] [Next >] [Cancel]

3.14 Select the license file that was saved previously

3.15 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

3.16 Select the components for the installation

ISELED 4.8.0 for S32 SDK 4.0 Setup — □ ✕

Choose Components
Choose which features of ISELED 4.8.0 for S32 SDK 4.0 you want to install.

Check the components you want to install and uncheck the components you don't want to install. Click Next to continue.

Select the type of install:

AllPackages ⌄

Or, select the optional components you wish to install:

- ☑ Examples
- ☑ Drivers
- ⊞ ☑ Documentation

Space required: 23.2MB

Description
Position your mouse over a component to see its description.

NXP

[< Back] [Next >] [Cancel]

3.17 Select the installation path. Make sure that the installation path is the same as the S32K SDK RTM 4.0.0 installation folder

ISELED 4.8.0 for S32 SDK 4.0 Setup — □ ✕

Choose Install Location
Choose the folder in which to install ISELED 4.8.0 for S32 SDK 4.0.

This Library needs to be installed on top of SDK release 4.0. Select S32K SDK install directory to be used as a base for ISELED installation

S32K SDK install directory.

C:\NXP\S32DS.3.3\S32DS\software\S32SDK_S32K1XX_RTM_4.(Browse...

Space required: 23.2MB
Space available: 105.0GB

NXP

< Back   Next >   Cancel

3.18 Finally click Install to start the setup

ISELED 4.8.0 for S32 SDK 4.0 Setup

Ready to Install the Program
The wizard is ready to begin the installation.

Click Install to begin the installation.

If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.

NXP

< Back   Install   Cancel
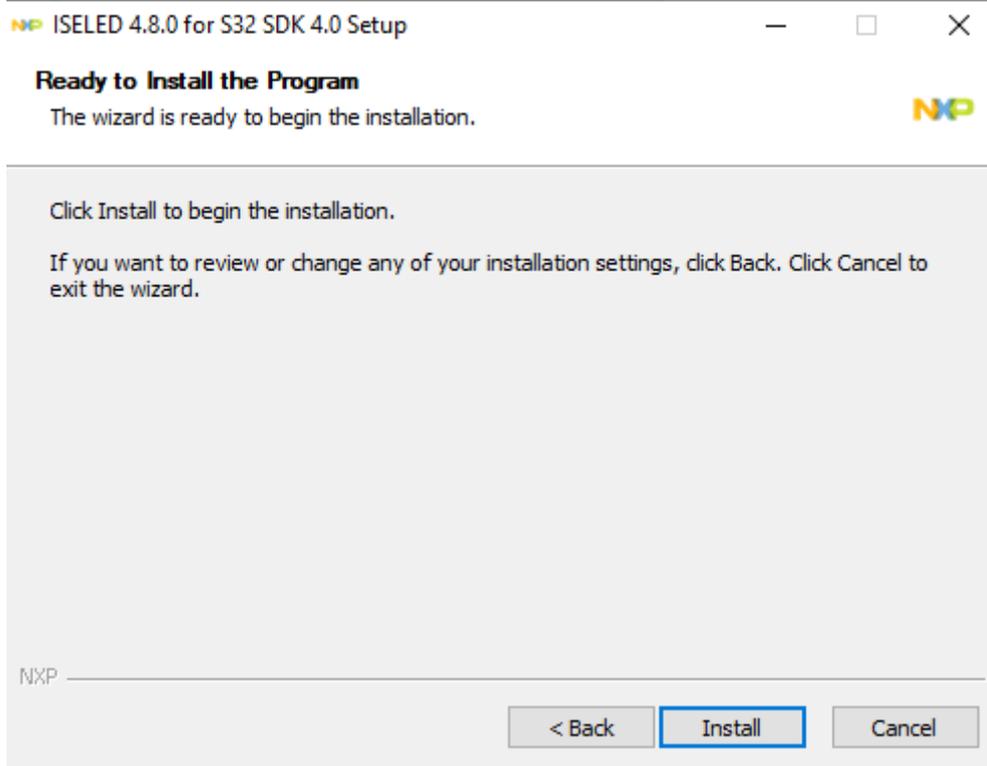
4. Troubleshooting

To verify the ISELED Driver installation please follow the next steps:
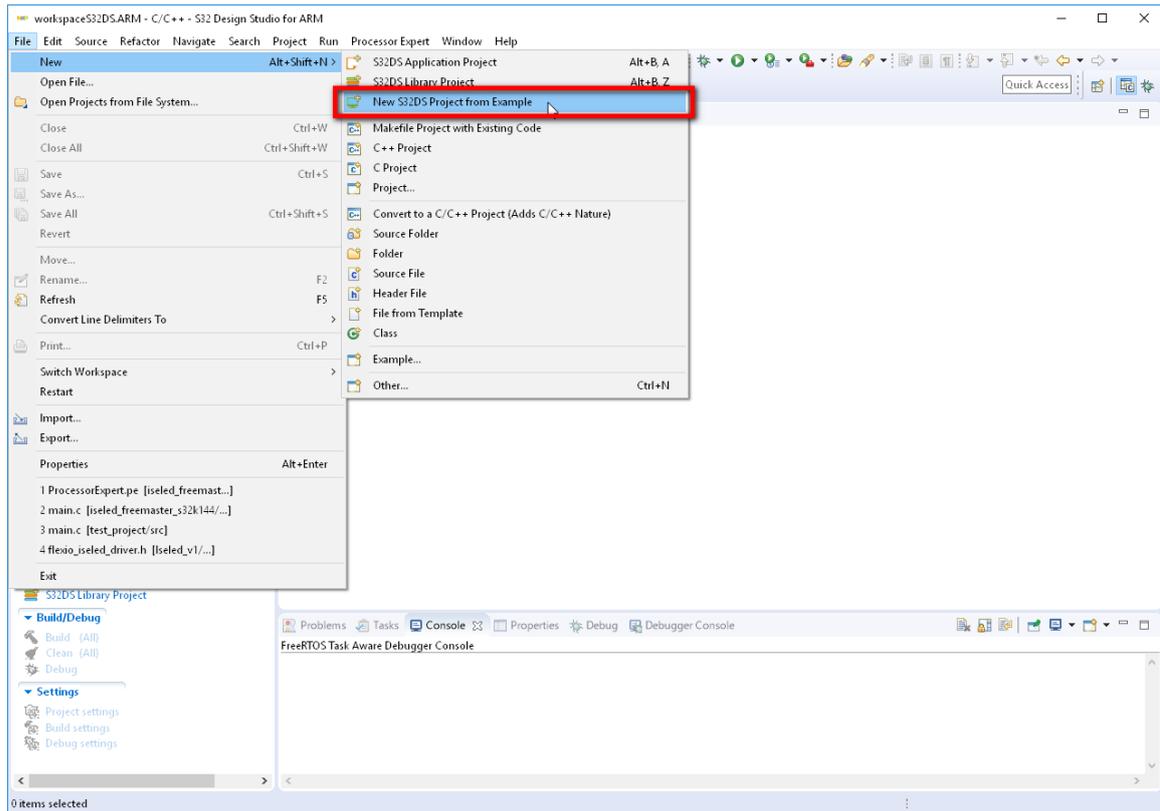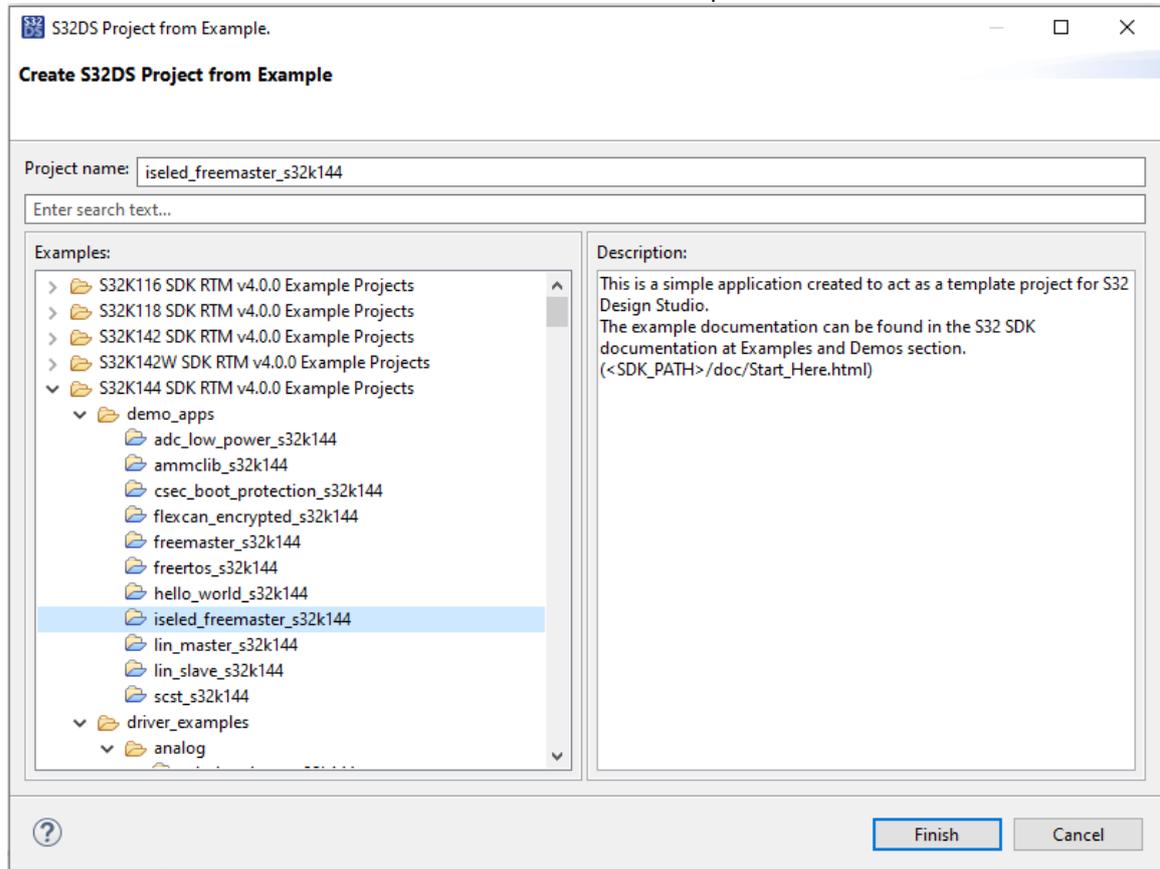
4.1 Start the S32 Design studio and select New S32DS Project from Example in File menu.

4.2   If the ISELED Driver example application does not appear in the examples list, it means that the installation path for the ISELED Driver did not match the S32K SDK RTM 4.0.0 installation folder. Please see step 3.16.

4.3   Another way to verify the ISELED Driver installation is to check if the ISELED libraries are present in the S32K SDK installation folder

5. 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
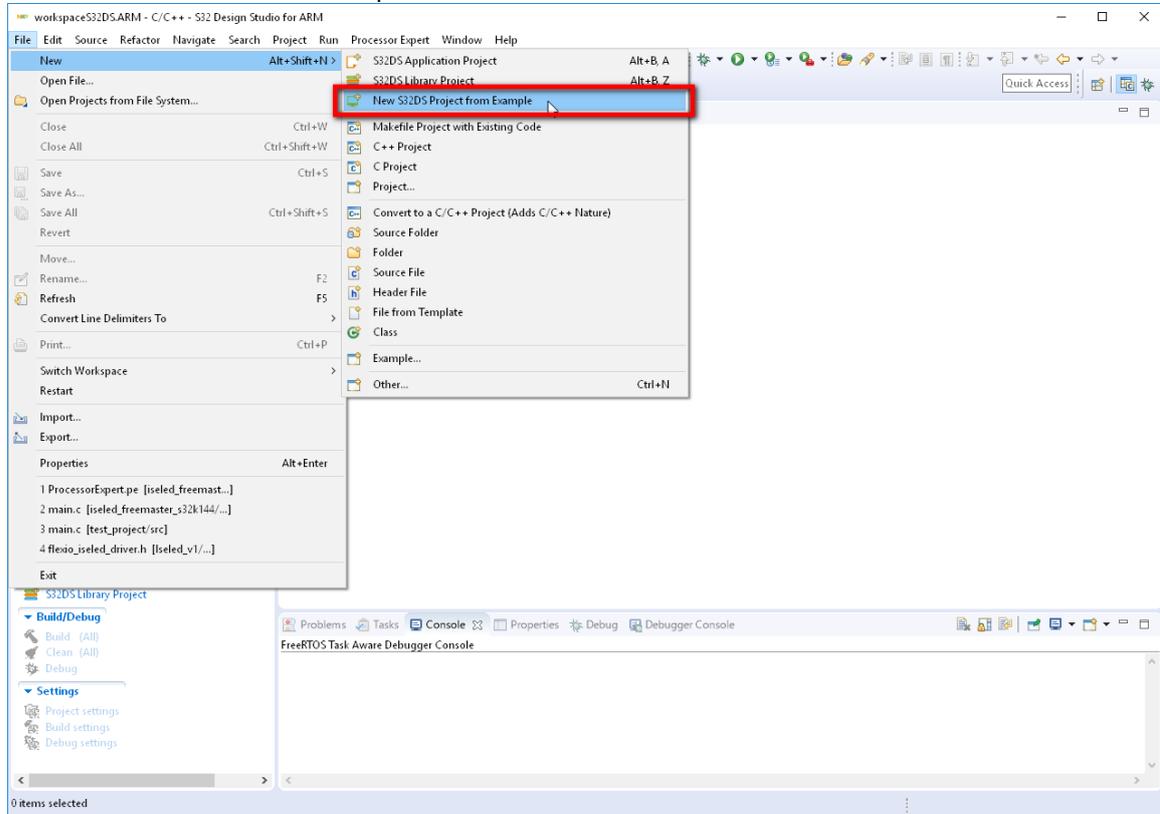www.nxp.com/freemaster website to download the installation package of the FreeMASTER component.
For a detailed description of the ISELED Driver example application, please refer to the ISELED_UserGuide document that can be found in the installation path under the "doc" folder.
To start the user application based on this example, please follow these instructions:
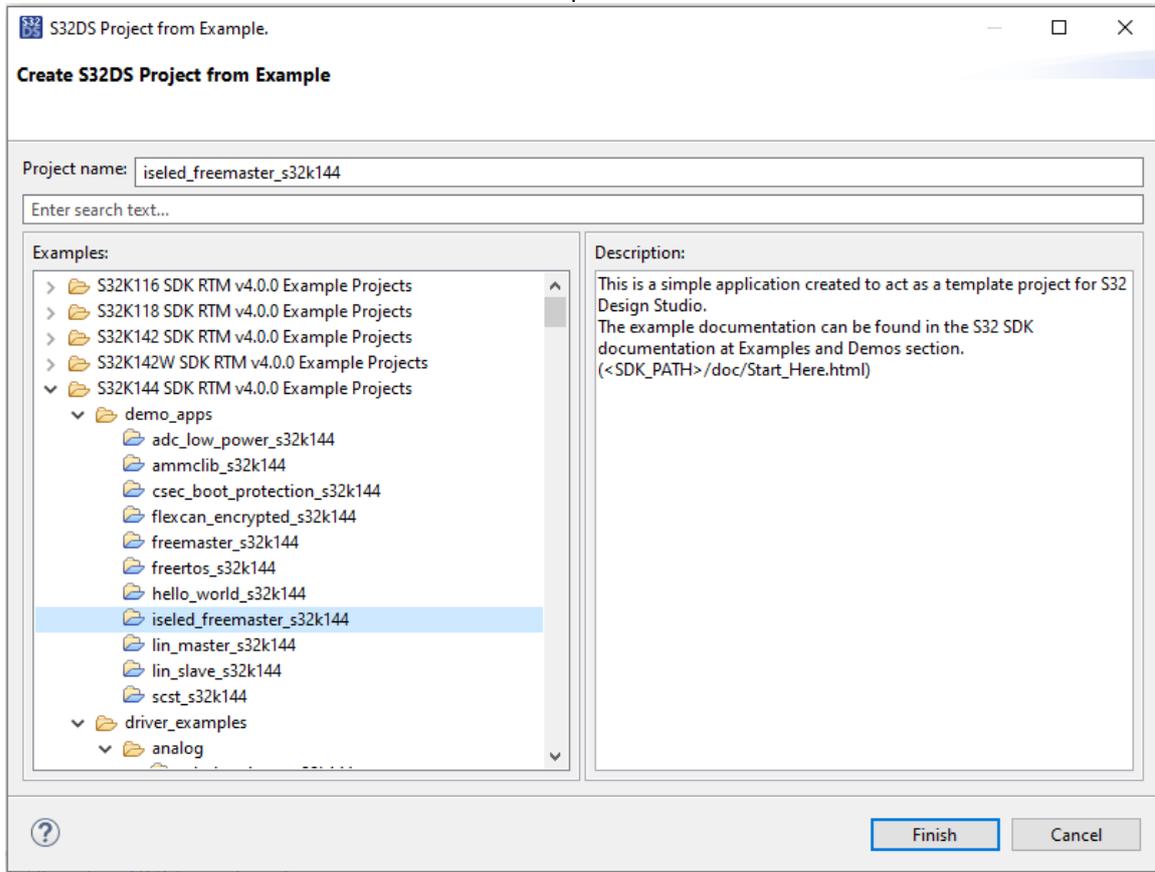
5.1 Start the S32 Design studio and select New S32DS Project from Example in File menu.
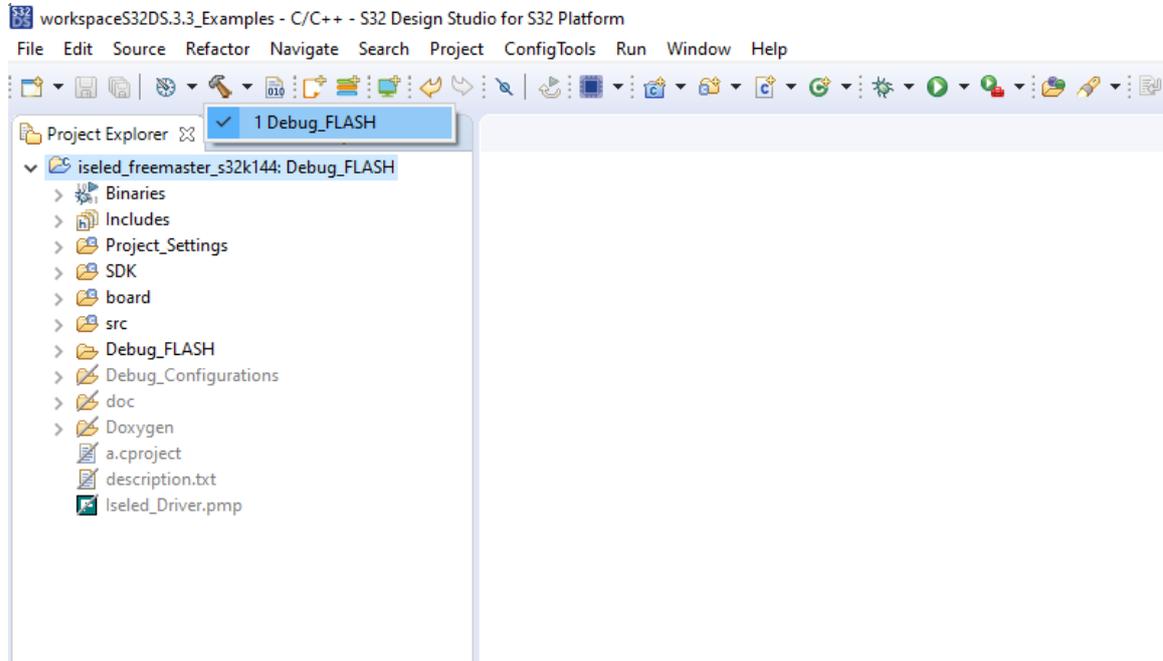
5.2   Select the iseled_freemaster_s32k144 example application from the S32K144 examples list.
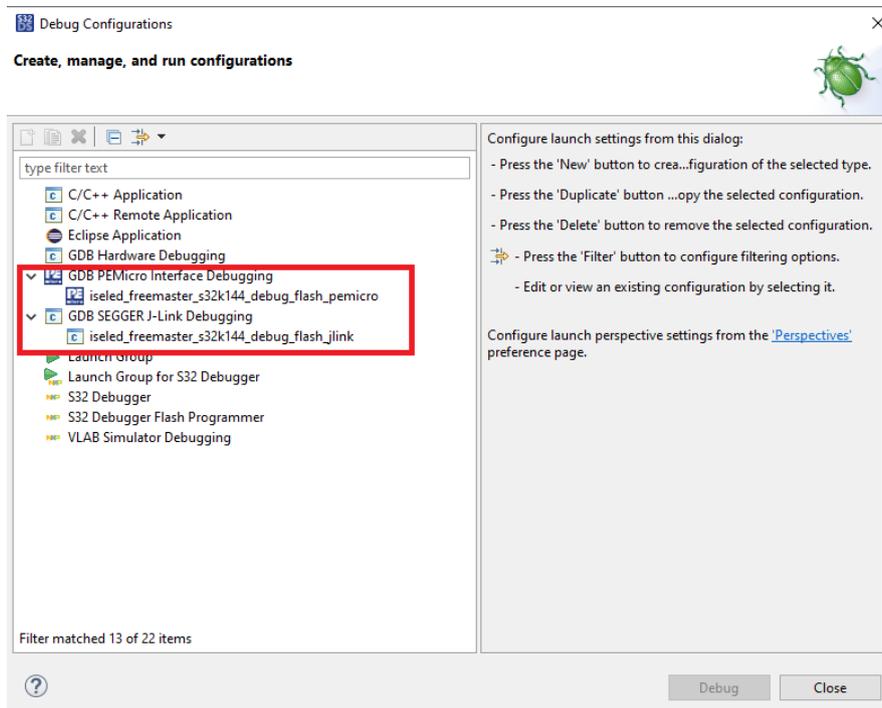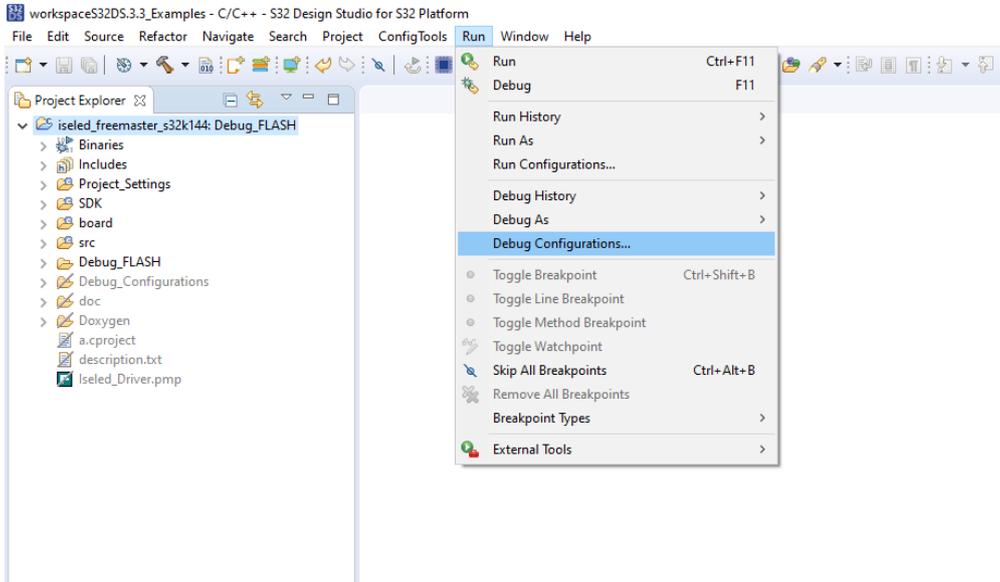
5.3 Build the project by selecting the build command from the menu bar and selecting the Debug_FLASH option.

5.4 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.