



**IAR Embedded
Workbench**

Getting Started with IAR Embedded Workbench® for Renesas Synergy™

COPYRIGHT NOTICE

© 2016–2020 IAR Systems AB.

No part of this document may be reproduced without the prior written consent of IAR Systems AB. The software described in this document is furnished under a license and may only be used or copied in accordance with the terms of such a license.

DISCLAIMER

The information in this document is subject to change without notice and does not represent a commitment on any part of IAR Systems. While the information contained herein is assumed to be accurate, IAR Systems assumes no responsibility for any errors or omissions.

In no event shall IAR Systems, its employees, its contractors, or the authors of this document be liable for special, direct, indirect, or consequential damage, losses, costs, charges, claims, demands, claim for lost profits, fees, or expenses of any nature or kind.

TRADEMARKS

IAR Systems, IAR Embedded Workbench, Embedded Trust, C-Trust, IAR Connect, C-SPY, C-RUN, C-STAT, IAR Visual State, IAR KickStart Kit, I-jet, I-jet Trace, I-scope, IAR Academy, IAR, and the logotype of IAR Systems are trademarks or registered trademarks owned by IAR Systems AB.

Microsoft and Windows are registered trademarks of Microsoft Corporation.

Arm, Cortex, Thumb, and TrustZone are registered trademarks of Arm Limited. EmbeddedICE is a trademark of Arm Limited. uC/OS-II and uC/OS-III are trademarks of Micrium, Inc. CMX-RTX is a trademark of CMX Systems, Inc. ThreadX is a trademark of Express Logic. RTX is a trademark of Quadros Systems. Fusion is a trademark of Unicoi Systems.

Renesas Synergy is a trademark of Renesas Electronics Corporation.

Adobe and Acrobat Reader are registered trademarks of Adobe Systems Incorporated.

All other product names are trademarks or registered trademarks of their respective owners.

EDITION NOTICE

Seventh edition: February 2020

Part number: GSEWSYNERGY-7

Internal reference: IJOA.

Getting started

- Introduction to IAR Embedded Workbench® for Renesas Synergy™
- Installing and using the tools

Introduction to IAR Embedded Workbench® for Renesas Synergy™

Before you can start using IAR Embedded Workbench for Renesas Synergy you must install:

- IAR Embedded Workbench for Renesas Synergy
Note that this is a special edition; you cannot use a standard IAR Embedded Workbench for Arm together with Renesas Synergy
- Synergy Standalone Configurator (SSC), which provides a graphical environment for various board configurations.
- Synergy Software Package (SSP), which contains example source code files, header files, and linker configuration files.

For more information about SSC and SSP, refer to the *Renesas Synergy™ Software Package (SSP) User's Manual* on the SSP Documentation page on the Renesas Synergy Gallery.

By means of these tools, you can create a Renesas Synergy project in the IAR Embedded Workbench IDE. A wizard will guide you through the setup of the project, which includes:

- Selecting the board support that you require
- Selecting the type of project you wish to create, which means that you will get example source code files, header files, and linker configuration files
- Configuring MPU pin function assignments, clock and peripheral settings, and interrupt source assignments.

When the wizard is finished, you will have a ready-made project, which you can use as a starting-point for further development.

Installing and using the tools

What do you want to do?

- *Installing the tools*, page 4
- *Creating a Renesas Synergy project*, page 4

INSTALLING THE TOOLS

To install, you must:

- Download and install the Renesas Synergy Standalone Configurator (SSC) from the Renesas Synergy Gallery. You can find it under Development Tools. The default installation directory is `C:\Renesas\Synergy\SSC_SSCversion`.
- Download and install the Renesas Synergy Software Package (SSP) from the Renesas Synergy Gallery. During the installation you will be prompted to specify an installation directory for the SSP. Point the SSP installer to the directory where you just installed the SSC (for example `C:\Renesas\Synergy\SSC_SSCversion`).
- Contact IAR Systems to get the IAR Embedded Workbench for Renesas Synergy license and installer file.

To install IAR Embedded Workbench:

- 1 When you have got the IAR Embedded Workbench for Renesas Synergy license and installer file, run the installer.
- 2 When prompted, specify the license number in the IAR License Manager.

Note: This license entitles you to use this specific edition of IAR Embedded Workbench, but not the Synergy Standalone Configurator (SSC) for which separate licenses are required.

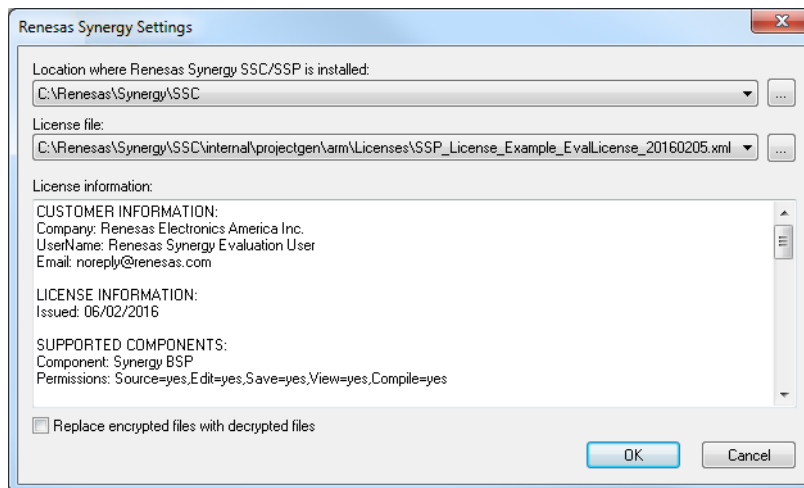
CREATING A RENESAS SYNERGY PROJECT

- 1 In the IAR Embedded Workbench IDE, choose **Renesas Synergy>New Synergy Project**.
- 2 In the **Save Workspace As** dialog box that appears, choose a suitable destination directory for your workspace file (*.eww)—the container that holds your project—and a name for your workspace, for example `MyWorkspace`, and click **Save**.

Note: Do not save your workspace in the root directory of your operating system (C:).

- 3 In the **Renesas Synergy Setting** dialog box that appears, specify:
 - The location of your installed Synergy Standalone Configurator (SSC), which by default is installed in `C:\Renesas\Synergy\SSC_SSCversion`.

- The Synergy License File, which you can find in the SSC installation directory `C:\Renesas\Synergy\SSC_SSCversion\internal\projectgen\arm\Licenses`.
- Whether or not you would like to replace any encrypted source files with decrypted ones. Note that a Renesas Synergy Source License is required for this function.

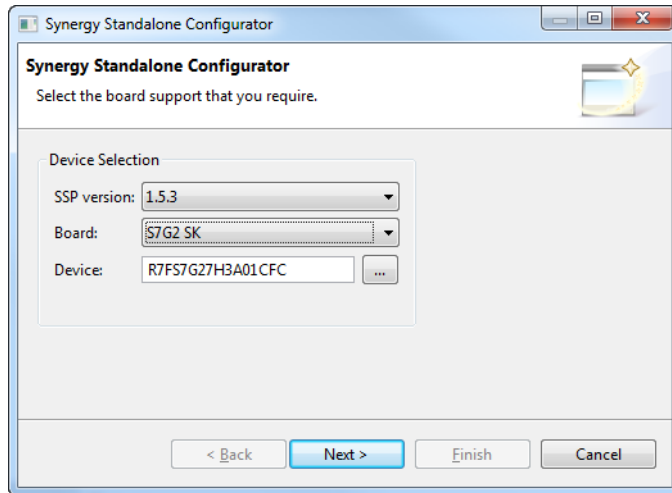


Click **OK**.

- 4 In the **Save As** dialog box that appears, specify the name of your project (* .ewp), for example `MyProject`.

Note: Do not save your project in the root directory of your operating system (C:).

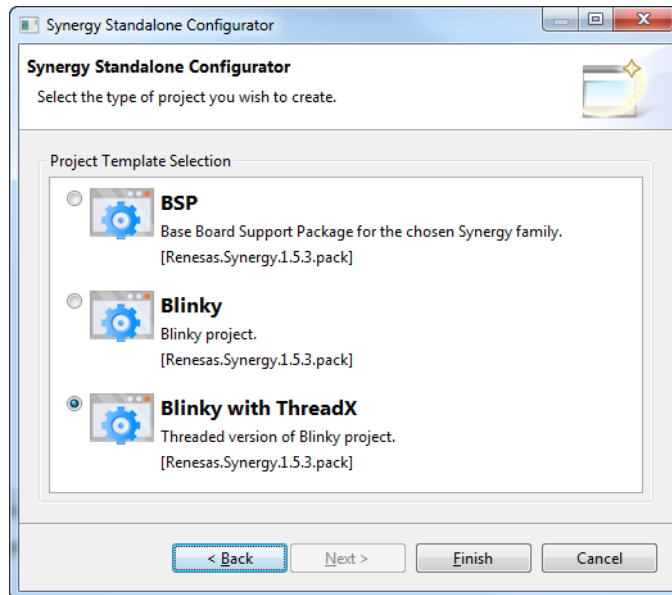
- 5 The IAR Embedded Workbench IDE now connects with the Renesas Synergy Standalone Configurator (SSC). Specify the board support you require:



Note that the SPP versions available in the drop-down list correspond to the versions you have previously installed on your computer.

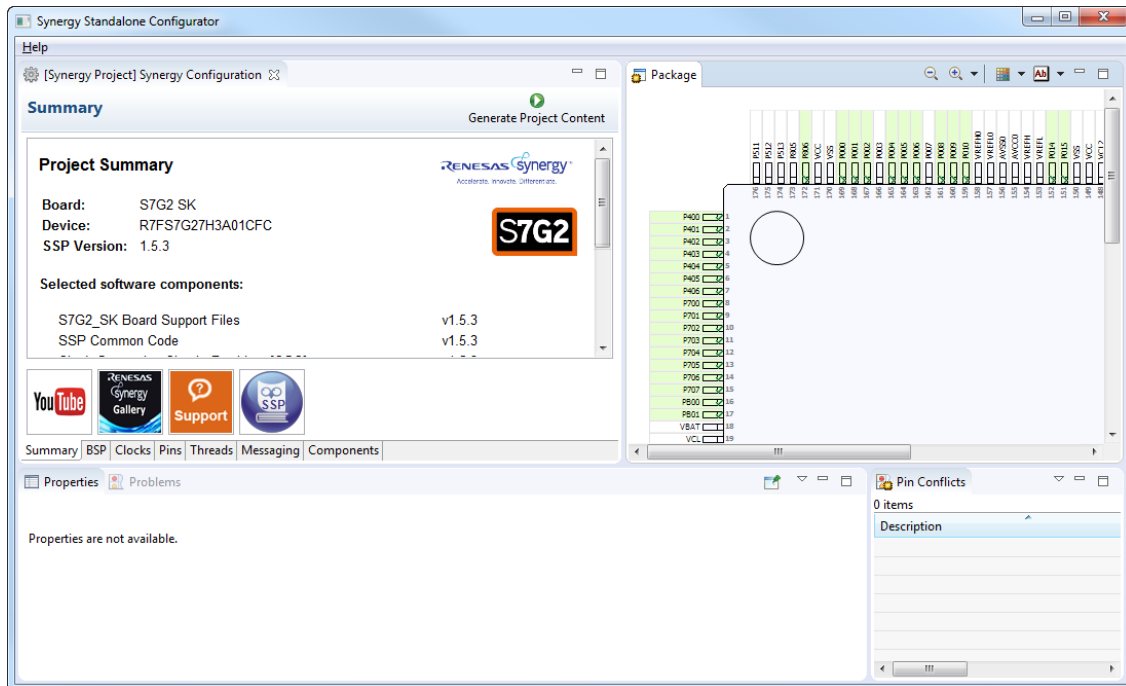
Click **Next**.

- 6 The Synergy Software Packages come with several example projects—which include source code files, header files, and linker configuration files—adapted for your device. Select the example packages that you want to add to your project:





Click **Finish**.

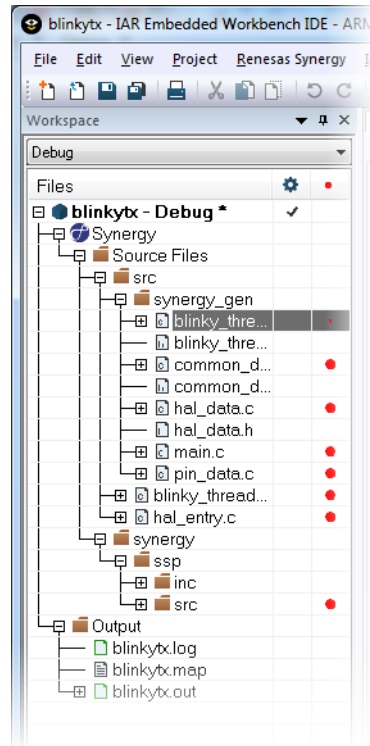
- 7 You can now configure the Renesas SSP to fit your project requirements to include BSP, clocks, pins, drivers, Express Logic middleware, etc.




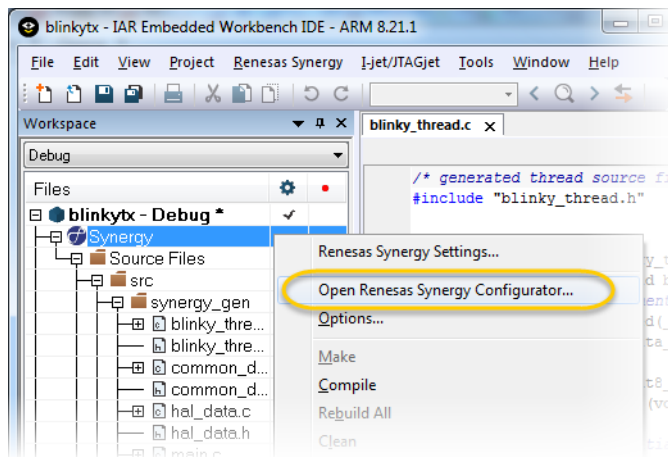
Make your settings and when finished, click the **Generate Project Content** button. The source code is now generated.

You can now click the red button () at the top right corner to close the SSC. Note that you can re-open the Configurator at a later stage by clicking on the **Renesas Synergy Configuration** button ().

- 8 After a couple of seconds, your Renesas Synergy project is displayed in the **Workspace** window:



- 9 If needed, you can open the Configurator again; click the **Synergy Configuration** button () in the toolbar, or select the **Synergy** level in the **Workspace** window, right-click and choose **Open Renesas Synergy Configurator** from the context menu



- 10 Make your settings and when finished, click the **Generate Project Content** button. The affected source code files are now re-generated.
- 11 You can now continue building and debugging according to the standard routines in the IAR Embedded Workbench IDE, see the *IDE Project Management and Building Guide for Arm*.

Note that the Synergy Project is by default configured for the J-Link debugging probe. If you have another debugging probe, for example I-jet or I-jet Trace, choose **Project>Options>Debugger** in the IDE and select **I-jet/JTAGjet** from the **Driver** drop-down list.