



**IAR Embedded  
Workbench**

# Getting Started with IAR Embedded Workbench® for Renesas Synergy™

## **COPYRIGHT NOTICE**

© 2017 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, IAR Connect, C-SPY, C-RUN, C-STAT, IAR Visual State, visualSTATE, 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 Advanced RISC Machines Ltd. EmbeddedICE is a trademark of Advanced RISC Machines Ltd.

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**

Fifth edition: November 2017

Part number: GSEWSYNERGY-5

Internal reference: IMAE.

# 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 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 your 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`).
- Download and install IAR Embedded Workbench for Renesas Synergy from the Renesas Synergy Gallery.

### To install IAR Embedded Workbench:

- 1 In your web browser, specify the URL <https://synergygallery.renesas.com> and download IAR Embedded Workbench for Renesas Synergy from the Renesas Synergy Gallery.

You will also find information about how to obtain a license and get a license number.

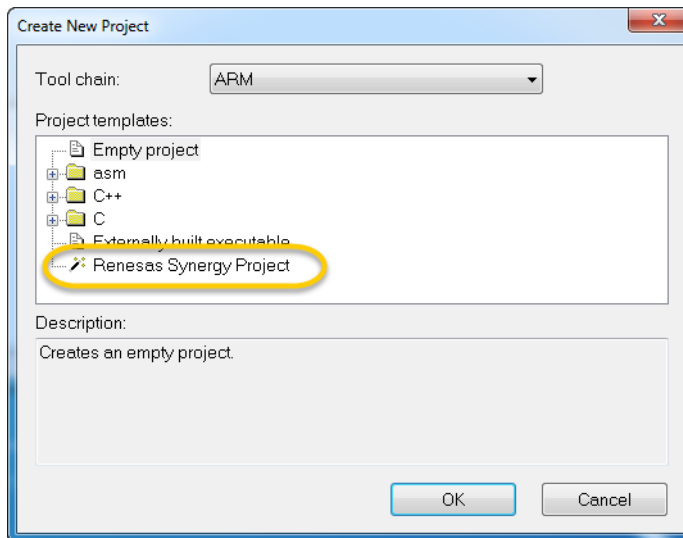
- 2 Execute the installer that is included in the downloaded file.
- 3 Specify the license number when prompted for in the IAR License Manager.

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

## CREATING A RENESAS SYNERGY PROJECT

- 1 In the IAR Embedded Workbench IDE, choose **Project>Create New Project**.

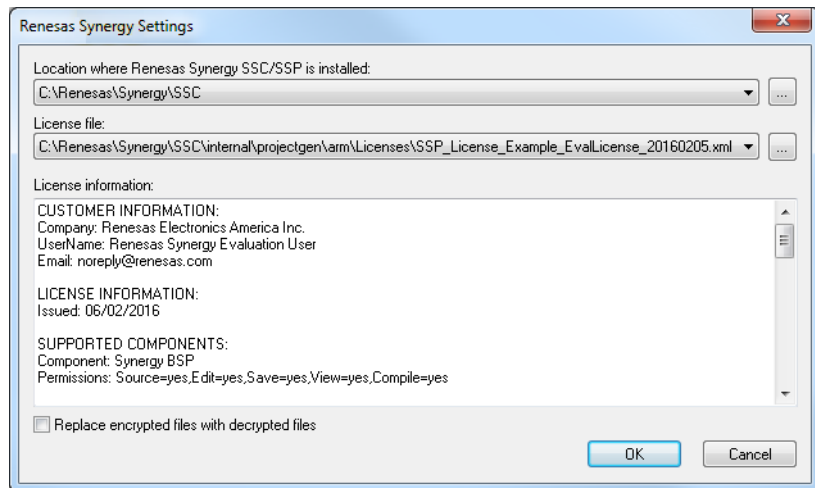
- 2 In the **Create New Project** dialog box, select **Renesas Synergy Project** and click **OK**.



- 3 In the standard save dialog box that appears, choose a suitable destination directory for your workspace (the container that holds your project), for example *MyWorkspace*, and click **Save**.

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

- 4 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\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.

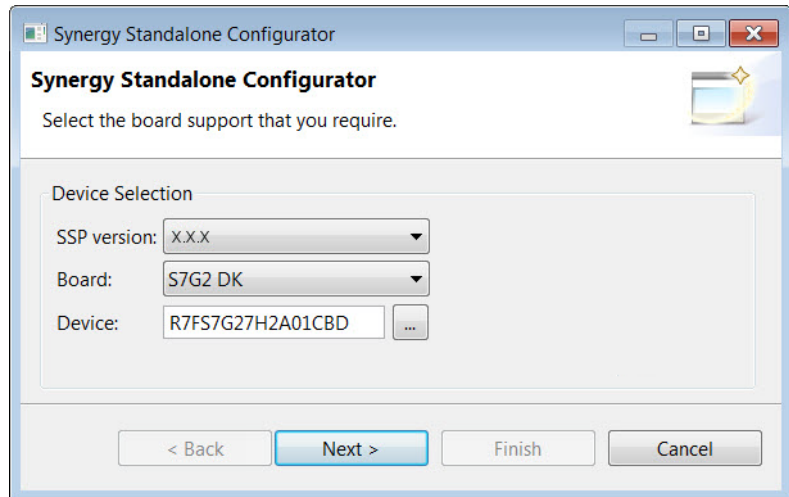


Click **OK**.

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

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

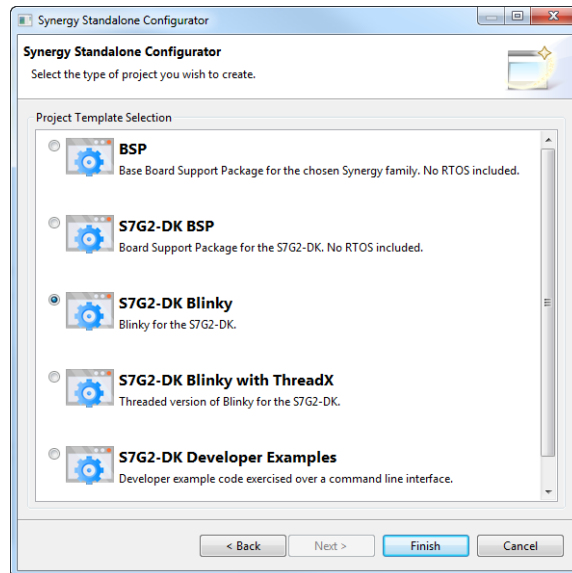
- 6 The IAR Embedded Workbench IDE now connects with the Renesas Synergy Standalone Configurator. Specify the board support you require:



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

Click **Next**.

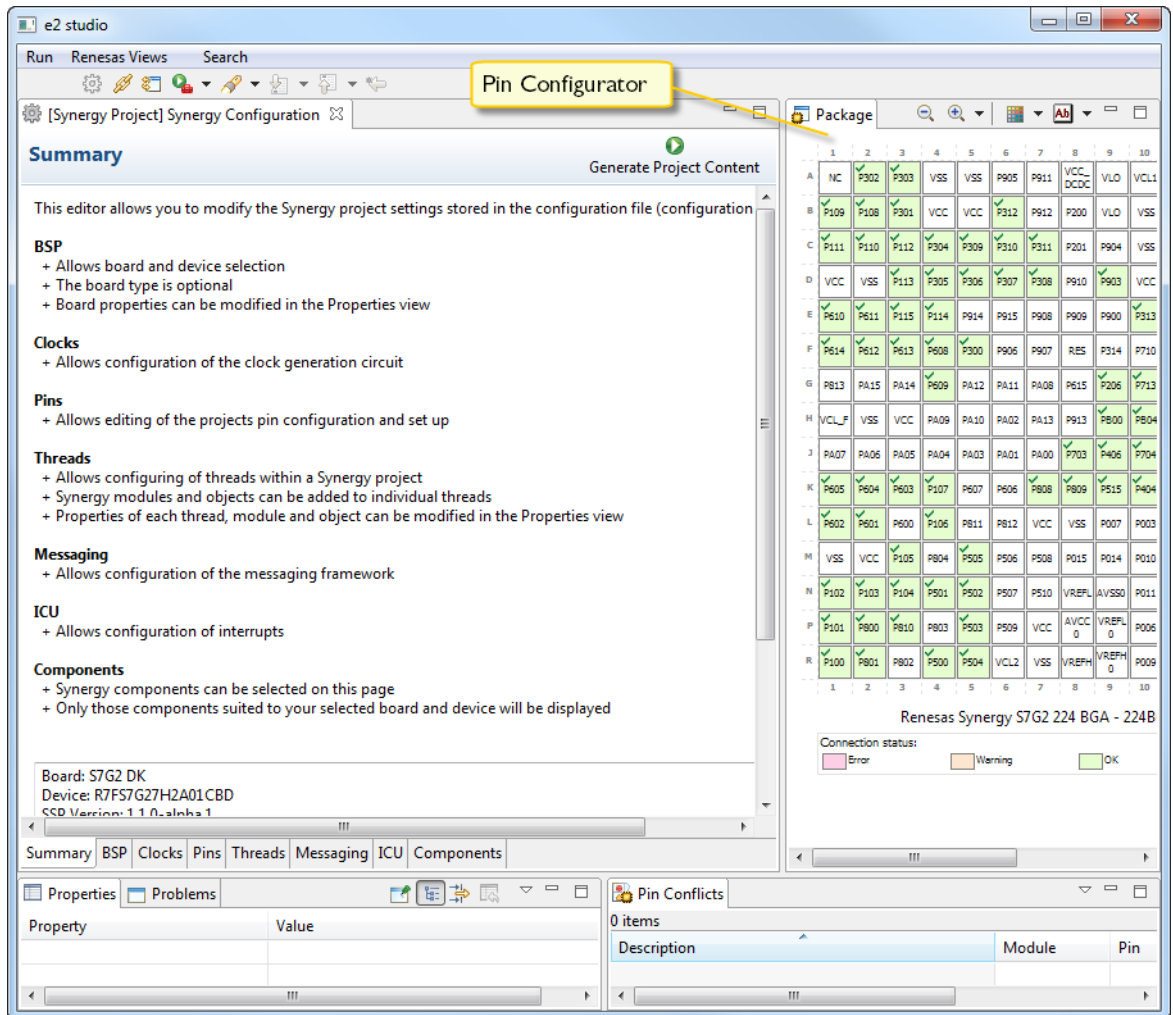
- 7 The Synergy Software Packages come with several example projects—which include source code files, header files, and linker configuration files—adapted for your device. Select the example packages that you want to add to your project:



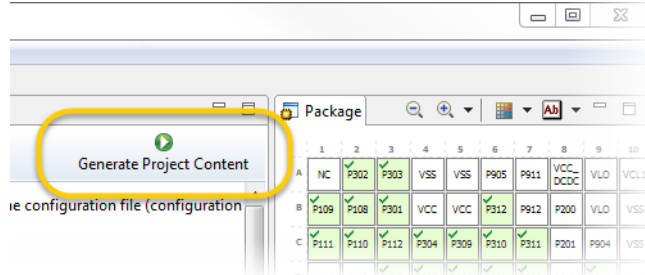
Click **Finish**.



- 8 In the Pin Configurator you can configure MPU pin function assignments, clock and peripheral settings, and interrupt source assignments.



Make your settings and when finished, click the **Generate Project Content** button.

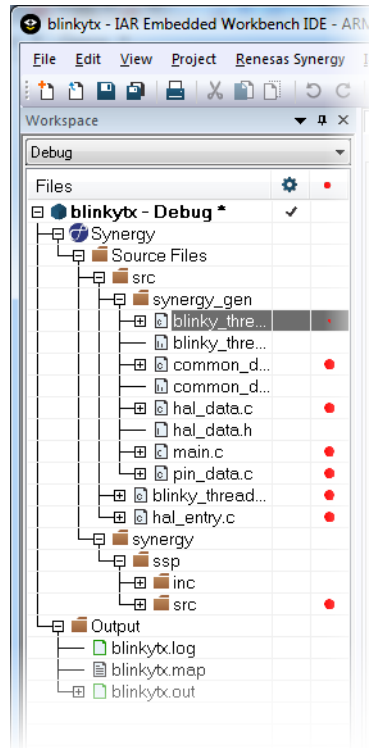



The source code is now generated.

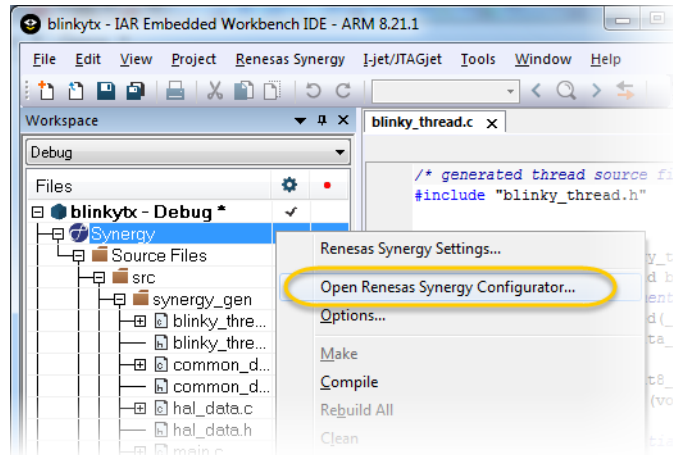
You can now click the red button (  ) at the top right corner.

Note that you can go back to this configuration state at a later stage if needed.

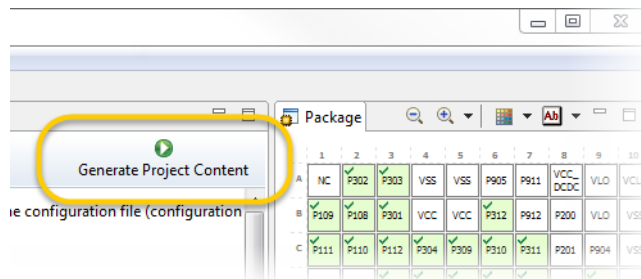
- 9 After a couple of seconds, your Renesas Synergy project is displayed in the **Workspace** window:



- 10 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



- 11 Make your settings and when finished, click the **Generate Project Content** button.



The affected source code files are now re-generated.

- 12 You can now continue building and debugging according to the standard routines in the IAR Embedded Workbench IDE, see the *IAR Embedded Workbench® IDE User Guide*.

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.