

# Target Board Kit S5D3 (TB-S5D3)

Quick Start Guide

Renesas Synergy™ Platform  
Synergy Tools & Kits  
Kits: TB-S5D3 v1.0

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## Precautions

This Renesas Synergy™ Target Board Kit is only intended for use in a laboratory environment under ambient temperature and humidity conditions. A safe separation distance should be used between this and any sensitive equipment. Its use outside the laboratory, classroom, study area, or similar such area invalidates conformity with the protection requirements of the Electromagnetic Compatibility Directive and could lead to prosecution.

The product generates, uses, and can radiate radio frequency energy and may cause harmful interference to radio communications. There is no guarantee that interference will not occur in a particular installation. If this equipment causes harmful interference to radio or television reception, which can be determined by turning the equipment off or on, you are encouraged to try to correct the interference by one or more of the following measures:

- Ensure attached cables do not lie across the equipment.
- Reorient the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that which the receiver is connected.
- Power down the equipment when not in use.
- Consult the dealer or an experienced radio/TV technician for help.

Note: It is recommended that wherever possible shielded interface cables are used.

The product is potentially susceptible to certain EMC phenomena. To mitigate against them it is recommended that the following measures be undertaken:

- The user is advised that mobile phones should not be used within 10 m of the product when in use.
- The user is advised to take ESD precautions when handling the equipment.

The Renesas Synergy™ Target Board Kit does not represent an ideal reference design for an end product and does not fulfill the regulatory standards for an end product.

Renesas Synergy™ Platform

## Target Board Kit S5D3 (TB-S5D3)

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## 1. Introduction

This Quick Start Guide (QSG) walks you through the Out-of-Box (OoB) Demonstration (Blinky) Application that the TB-S5D3 board comes pre-programmed with. The QSG also includes the location from where you can download the software, development tools, and additional application projects for the TB-S5D3.

## 2. Kit Contents

The following components are included in the Target Board Kit S5D3 (TB-S5D3):

- 1x TB-S5D3 board
- 1x USB Type-A to USB Micro-B cable

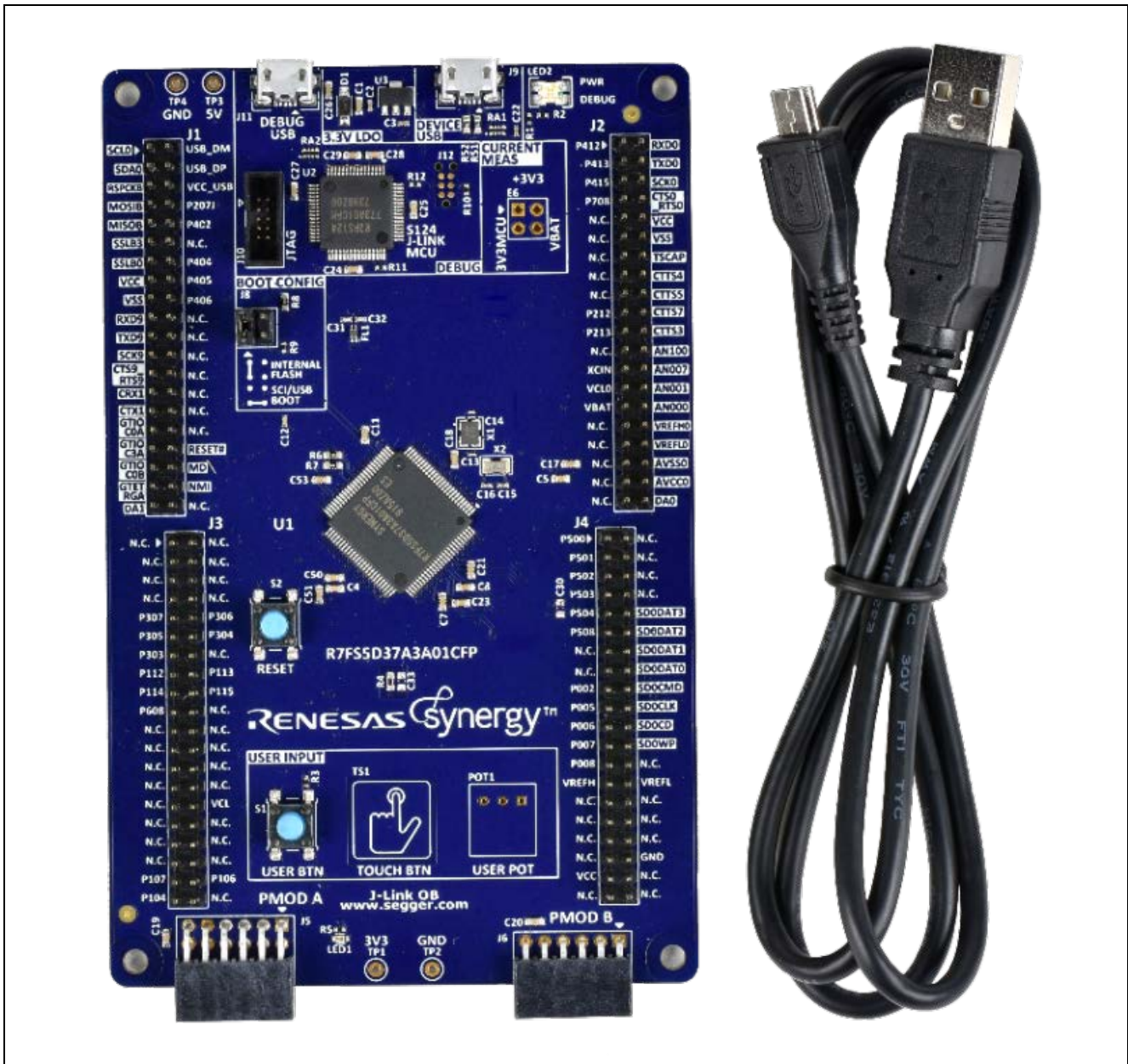


Figure 1. TB-S5D3 Contents

### 3. Overview of the Out-of-Box (OoB) Demonstration (Blinky) Application

The Out-of-Box (OoB) Demonstration (Blinky) Application uses the RTOS timers in the Synergy Software Package (SSP) to toggle an LED connected to the GPIO of the S5D3 MCU at an interval of 0.5 seconds.

### 4. Setting up the TB-S5D3 Board

Prior to powering up the board, make sure that the jumper J8 is set up to configure the S5D3 MCU to execute code from the internal flash. Jumper J8 is located in the BOOT CONFIG section of the TB-S5D3 board as shown in Figure 2.

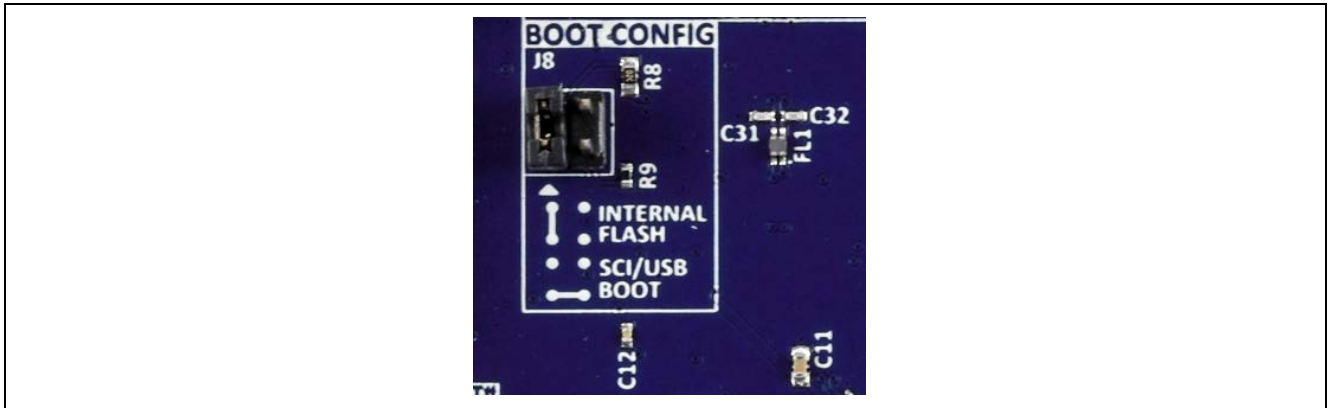


Figure 2. Boot Configuration Jumper Setting

### 5. Powering up the TB-S5D3 Board

You can power up the TB-S5D3 board from a 5 V power supply using the USB Type-A to USB Micro-B cable. Connect the Micro USB end of the cable to connector J11 (DEBUG USB located in the DEBUG area) on the TB-S5D3 board. Connect the other end of the cable to the USB port of a host PC or a USB power supply. LED2 (PWR) on the TB-S5D3 board lights up solid green indicating that the TB-S5D3 board is powered on.

Note: If 5 V is supplied from the USB power supply or the host PC on which J-Link drivers are not installed, LED2 (DEBUG) blinks orange. If 5 V is supplied from the host PC on which J-Link drivers are installed and detected by the TB-S5D3, the LED2 (DEBUG) blinks orange with a very small duty cycle that is barely noticeable.

### 6. Running the Out-of-Box (OoB) Demonstration (Blinky) Application

Once the TB-S5D3 board is powered up, the Out-of-Box (OoB) Demonstration (Blinky) Application begins to execute. The LED 1 blinks red at an interval of 0.5 seconds.

Note: The source code of the Out-of-Box (OoB) Demonstration (Blinky) Application is available as *Out-of-Box (OoB) Demonstration (Blinky) Application for S1/S3/S5 Target Board Kits* downloadable from the S5D3 Target Board Kit webpage at [www.renesas.com/synergy/tb-s5d3](http://www.renesas.com/synergy/tb-s5d3).

## 7. Next Steps

### 1. Learn more about the TB-S5D3.

Visit the S5D3 Target Board Kit webpage ([www.renesas.com/synergy/tb-s5d3](http://www.renesas.com/synergy/tb-s5d3)) to learn more about the TB-S5D3 and download related documentation, schematics, design files, application projects, and so forth.

### 2. Create My Renesas account (if you do not have one already).

You need a **My Renesas** account to download software, development tools, and application projects. Log in to or Sign up for a **My Renesas** account at [www.update.renesas.com/SSO/login](http://www.update.renesas.com/SSO/login).

### 3. Download and install Synergy Software Package and Development Tools.

The Synergy Software Package, J-Link USB drivers, and one of the two supported tool chains are bundled and available as a single downloadable file as follows:

A. **IAR Platform Installer** installs Synergy Software Package and IAR Embedded Workbench® for Renesas Synergy™ IDE with IAR compiler and J-Link USB drivers.

Download from [www.renesas.com/synergy/ewsynergy](http://www.renesas.com/synergy/ewsynergy).

B. **e<sup>2</sup> studio Platform Installer** installs Synergy Software Package and e<sup>2</sup> studio for Synergy IDE with IAR compiler and J-Link USB drivers.

Download from [www.renesas.com/synergy/e2studio](http://www.renesas.com/synergy/e2studio).

Run the platform installer to install the necessary components on to your computer.

### 4. Explore existing application projects for the TB-S5D3.

Renesas provides several application projects to demonstrate different capabilities of the S5D3 MCU Group. These application projects can also serve as a good starting point for you to develop your custom applications. Application projects available for the TB-S5D3 are listed at [www.renesas.com/synergy/tb-s5d3](http://www.renesas.com/synergy/tb-s5d3).

- Notes:
1. Every application project includes the project files, an application note, and instructions to import the application project.
  2. On downloading the application project from the website to your computer, the application projects have to be built using one of the two supported tool chains before they can be downloaded on to the TB-S5D3 board.

### 5. Learn more about the Synergy Platform.

Visit the following URLs to learn about the following elements of the Synergy Platform and download different components:

— Synergy Software: [www.renesas.com/synergy/software](http://www.renesas.com/synergy/software)

— Synergy Hardware: [www.renesas.com/synergy/hardware](http://www.renesas.com/synergy/hardware)

— Synergy Solutions Gallery: [www.renesas.com/synergy/solutionsgallery](http://www.renesas.com/synergy/solutionsgallery)

## Website and Support

Visit the following URLs to learn about key elements of the Synergy Platform, download components and related documentation, and get support.

Synergy Software	<a href="http://www.renesas.com/synergy/software">www.renesas.com/synergy/software</a>
Synergy Software Package	<a href="http://www.renesas.com/synergy/ssp">www.renesas.com/synergy/ssp</a>
Software add-ons	<a href="http://www.renesas.com/synergy/addons">www.renesas.com/synergy/addons</a>
Software glossary	<a href="http://www.renesas.com/synergy/softwareglossary">www.renesas.com/synergy/softwareglossary</a>
Development tools	<a href="http://www.renesas.com/synergy/tools">www.renesas.com/synergy/tools</a>
Synergy Hardware	<a href="http://www.renesas.com/synergy/hardware">www.renesas.com/synergy/hardware</a>
Microcontrollers	<a href="http://www.renesas.com/synergy/mcus">www.renesas.com/synergy/mcus</a>
MCU glossary	<a href="http://www.renesas.com/synergy/mcuglossary">www.renesas.com/synergy/mcuglossary</a>
Parametric search	<a href="http://www.renesas.com/synergy/parametric">www.renesas.com/synergy/parametric</a>
Kits	<a href="http://www.renesas.com/synergy/kits">www.renesas.com/synergy/kits</a>
Synergy Solutions Gallery	<a href="http://www.renesas.com/synergy/solutionsgallery">www.renesas.com/synergy/solutionsgallery</a>
Partner projects	<a href="http://www.renesas.com/synergy/partnerprojects">www.renesas.com/synergy/partnerprojects</a>
Application projects	<a href="http://www.renesas.com/synergy/applicationprojects">www.renesas.com/synergy/applicationprojects</a>
Self-service support resources:	
Documentation	<a href="http://www.renesas.com/synergy/docs">www.renesas.com/synergy/docs</a>
Knowledgebase	<a href="http://www.renesas.com/synergy/knowledgebase">www.renesas.com/synergy/knowledgebase</a>
Forums	<a href="http://www.renesas.com/synergy/forum">www.renesas.com/synergy/forum</a>
Training	<a href="http://www.renesas.com/synergy/training">www.renesas.com/synergy/training</a>
Videos	<a href="http://www.renesas.com/synergy/videos">www.renesas.com/synergy/videos</a>
Chat and web ticket	<a href="http://www.renesas.com/synergy/resourcelibrary">www.renesas.com/synergy/resourcelibrary</a>



**Revision History**

Rev.	Date	Description	
		Page	Summary
1.00	Jan.01.19	-	Initial release
1.01	Feb.08.19	4	Updated Website and Support URLs, and made content improvements

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