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# RA8T1 Group

## Handbook for RA8T1

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### Introduction

This document compiles useful information for each stage of device selection, development, and Mass production.

Please utilize this information, materials and application notes as a handbook when developing.

### Target Device

RA8T1 Group

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1. The table of information and materials needed for Device Selection, Development and Mass production.

### 1.1 Step1: Device Selection

This section summarizes the information that is useful for the preliminary survey phase (Step1-1) and for the evaluation phase of device performance and features (Step1-2) when selecting the device.

#### 1.1.1 Step1-1: Preliminary survey phase

| #  | Item                                    | Content   | Link                     |
|----|---|---|--------------------------|
| 1  | <b>Hardware information</b>             | Datasheet   | <a href="#">Doc</a>      |
| 2  |   | RA Family Flyer   | <a href="#">Doc</a>      |
| 3  |   | RA Family Brochure  | <a href="#">Doc</a>      |
| 4  | <b>Products &amp; Solutions</b>         | Video   | <a href="#">Web site</a> |
| 5  |   | Blog  | <a href="#">Web site</a> |
| 6  |   | Reference designs (Winning combination)   | <a href="#">Web site</a> |
| 7  |   | Renesas academy   | <a href="#">Web site</a> |
| 8  |   | Overview of product longevity program (PLP)                                     | <a href="#">Web site</a> |
| 9  | <b>Product longevity program (PLP)</b>  | Product selection (product selector)<br>Note: Refer to PLP column in the chart. | <a href="#">Web site</a> |
| 10 | <b>Product Specification Comparison</b> | RA Family Product Selector  | <a href="#">Web site</a> |
| 11 |   | Industrial Networks Brochure  | <a href="#">Doc</a>      |
| 12 |   | Motor Solution Brochure   | <a href="#">Doc</a>      |
| 13 |   | White Paper: Solving IoT Security Issues with Embedded Microcontrollers         | <a href="#">Doc</a>      |
| 14 |   | White Paper: Securing your IP and Protecting Sensitive Data                     | <a href="#">Doc</a>      |
| 15 |   | White Paper: Security for the Connected World                                   | <a href="#">Doc</a>      |

## 1.1.2 Step1-2: Evaluation phase of device performance and features

| #   | Item                                   | Content  | Link                     |
|---|--|--|--------------------------|
| <b>User's Manual / Documentation</b>          |  |  |                          |
| 1   | <b>Document</b>                        | User's manual: Hardware  | <a href="#">Doc</a>      |
| 2   |  | Technical update (errata information)  | <a href="#">Web site</a> |
| 3   |  | Product change notice (PCN)  | <a href="#">Web site</a> |
| 4   |  | RA Family NOMENCLATURE<br>(the meaning of character in part number)              | <a href="#">Doc</a>      |
| 5   |  | Semiconductor reliability handbook   | <a href="#">Doc</a>      |
| 6   |  | RELIABILITY REPORT   | <a href="#">Doc</a>      |
| 7   |  | RoHS<br>Product Options → Part Number →Environmental &<br>Export Classifications | <a href="#">Web site</a> |
| <b>Evaluation board</b>                       |  |  |                          |
| 8   | <b>Solution board Reference design</b> | CPU board (MCB)  | <a href="#">Web site</a> |
| 9   |  | Flexible Motor Control Kit (MCK)   | <a href="#">Web site</a> |
| <b>Evaluation environment (set up method)</b> |  |  |                          |
| 10  | <b>Setup method</b>                    | RA family beginner's guide   | <a href="#">Doc</a>      |
| 11  | <b>Software tool</b>                   | RA Family Development Environment - RA Flexible Software Package (FSP)           | <a href="#">Web site</a> |
| 12  |  | Migrating Projects to New FSP Version  | <a href="#">Doc</a>      |
| 13  |  | MCK - Quick Start Guide  | <a href="#">Doc</a>      |
| 14  |  | MCK Example Project Bundle   | <a href="#">Doc</a>      |
| 15  |  | RA smart configurator user's guide (tools for code generation)                   | <a href="#">Web site</a> |
| <b>Solution</b>                               |  |  |                          |
| 16  | <b>Motor and Inverter Control</b>      | Motor and inverter control solutions   | <a href="#">Web site</a> |
| 17  |  | Renesas motor workbench  | <a href="#">Web site</a> |
| 18  | <b>Security</b>                        | IoT Security   | <a href="#">Web site</a> |
| 19  |  | Security key management tool manual  | <a href="#">Web site</a> |
| 20  |  | Flexible Software Package (FSP)  | <a href="#">Web site</a> |
| 21  | <b>Functional safety</b>               | Functional safety solutions for Industrial automation                            | <a href="#">Web site</a> |
| 22  |  | Functional safety solution for industrial automation                             | <a href="#">Doc</a>      |
| 23  |  | Introduction to Renesas functional safety for industrial appliance(video)        | <a href="#">Web site</a> |
| 24  | <b>Artificial Intelligence (AI)</b>    | AI solutions   | <a href="#">Web site</a> |
| <b>Solution</b>                               |  |  |                          |
| 25  | <b>Training information</b>            | RA Family Video Library  | <a href="#">Web site</a> |
| 26  |  | Software & Tool Course solution menu   | <a href="#">Web site</a> |
| 27  |  | RA Family Software&Tool Course(Video Collection)                                 | <a href="#">Web site</a> |
| <b>Partner</b>                                |  |  |                          |
| 28  | <b>Partner information</b>             | Partner products (system solutions provider)                                     | <a href="#">Web site</a> |
| 29  |  | RA Family Partner Ecosystem  | <a href="#">Web site</a> |

## 1.2 Step2: Product Design, Development

This section summarizes useful information for product design and development.

| #  | Item                           | Content   | Link                     |
|----|--------------------------------|---|--------------------------|
| 1  | <b>Board Design</b>            | Quick design guide  | <a href="#">Doc</a>      |
| 2  |                                | CAD Model<br>Note: When you click the link in the CAD model column in the "Product Options" table on the product page, the CAD model information for each part# is displayed. | <a href="#">Web site</a> |
| 3  |                                | board simulation model (IBIS)   | <a href="#">Web site</a> |
| 4  |                                | Design guide for main clock circuit and Sub-Clock circuit   | <a href="#">Doc</a>      |
| 5  |                                | Notes regarding high-temperature operation  | <a href="#">Doc</a>      |
| 6  |                                | Guidelines for full-speed USB2.0 board design   | <a href="#">Doc</a>      |
| 7  |                                | Ethernet hardware design guide  | <a href="#">Doc</a>      |
| 8  |                                | Board design guideline for BGA products   | <a href="#">Doc</a>      |
| 9  |                                | Package information (package outline information, mount manual, etc.)   | <a href="#">Web site</a> |
| 10 | <b>Software Design</b>         | RA Flexible Software Package Documentation (Git Hub)  | <a href="#">Web site</a> |
| 11 | <b>Development environment</b> | Software and Tools  | <a href="#">Web site</a> |
| 12 |                                | How to videos - RA Family Software & Tool Course  | <a href="#">Web site</a> |
| 13 |                                | Supplemental user's manual for E2 /E2 Lite emulator   | <a href="#">Doc</a>      |

## 1.3 Step3: Mass Production

| # | Item                                   | Content  | Link                     |
|---|--|--|--------------------------|
| 1 | <b>Writing a program(Programmer)</b>   | PG-FP6   | <a href="#">Web site</a> |
| 2 | <b>Writing a program(Writing tool)</b> | Renesas flash programmer (GUI tool for PC)       | <a href="#">Web site</a> |
| 3 | <b>Inspection(Application notes)</b>   | Boundary Scan Description Language (BSDL) file * | <a href="#">Web site</a> |

\* It requires My Renesas account to access the content.

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## Supportive information

Get help from our technical staff and community.

| # |                                  | Link                     |
|---|----------------------------------|--------------------------|
| 1 | FAQ (frequently asked inquiries) | <a href="#">Web site</a> |
| 2 | RA forum (community)             | <a href="#">Web site</a> |
| 3 | RA Online Training Modules       | <a href="#">Web site</a> |
| 4 | Technical support                | <a href="#">Web site</a> |

**Revision History**

| Rev. | Date      | Description |                      |
|------|-----------|-------------|----------------------|
|      |           | Page        | Summary              |
| 1.00 | Sep. 2025 | -           | First edition issued |
| 1.01 | Jan. 2026 | 4           | Corrected typos      |
|      |           |             |                      |

For the most up-to-date information, please also refer to the product pages on our website (<https://www.renesas.com/en>). We appreciate your understanding.