

# RA2T1 Group

## Handbook for RA2T1

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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

RA2T1 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<br>(Winning combination)                                      | <a href="#">Web site</a> |
| 7  | <b>Product longevity program (PLP)</b>  | Renesas academy                                                                 | <a href="#">Web site</a> |
| 8  |                                         | Overview of product longevity program (PLP)                                     | <a href="#">Web site</a> |
| 9  |                                         | 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 |                                         | White Paper: Solving IoT Security Issues with Embedded Microcontrollers         | <a href="#">Doc</a>      |
| 12 |                                         | White Paper: Securing your IP and Protecting Sensitive Data                     | <a href="#">Doc</a>      |
| 13 |                                         | 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                     |
|----------------------------------------|----------------------------------------|----------------------------------------------------------------------------------|--------------------------|
| User's Manual / Documentation          |                                        |                                                                                  |                          |
| 1                                      | Document                               | User's manual: Hardware                                                          | <a href="#">Doc</a>      |
| 2                                      |                                        | RA Family NOMENCLATURE<br>(the meaning of character in part number)              | <a href="#">Doc</a>      |
| 3                                      |                                        | Semiconductor reliability handbook                                               | <a href="#">Doc</a>      |
| 4                                      |                                        | RELIABILITY REPORT                                                               | <a href="#">Doc</a>      |
| 5                                      |                                        | RoHS<br>Product Options → Part Number →Environmental &<br>Export Classifications | <a href="#">Web site</a> |
| Evaluation board                       |                                        |                                                                                  |                          |
| 6                                      | Evaluation board (for general purpose) | Fast Prototyping Board (FPB) (low-price model)                                   | <a href="#">Web site</a> |
| 7                                      | Solution board Reference design        | CPU board (MCB)                                                                  | <a href="#">Web site</a> |
| 8                                      |                                        | Flexible Motor Control Kit (MCK)                                                 | <a href="#">Web site</a> |
| Evaluation environment (set up method) |                                        |                                                                                  |                          |
| 9                                      | Setup method                           | RA family beginner's guide                                                       | <a href="#">Doc</a>      |
| 10                                     | Software tool                          | RA Family Development Environment - RA Flexible Software Package (FSP)           | <a href="#">Web site</a> |
| 11                                     |                                        | Migrating Projects to New FSP Version                                            | <a href="#">Doc</a>      |
| 12                                     |                                        | FPB - Quick Start Guide                                                          | <a href="#">Doc</a>      |
| 13                                     |                                        | MCK - Quick Start Guide                                                          | <a href="#">Doc</a>      |
| 14                                     |                                        | FPB Example Project Bundle                                                       | <a href="#">Doc</a>      |
| 15                                     |                                        | RA smart configurator user's guide (tools for code generation)                   | <a href="#">Web site</a> |
| Solution                               |                                        |                                                                                  |                          |
| 16                                     | Motor and Inverter Control             | Motor and inverter control solutions                                             | <a href="#">Web site</a> |
| 17                                     |                                        | Renesas motor workbench                                                          | <a href="#">Web site</a> |
| 18                                     | Security                               | IoT Security                                                                     | <a href="#">Web site</a> |
| 19                                     |                                        | Flexible Software Package (FSP)                                                  | <a href="#">Web site</a> |
| 20                                     | Functional safety                      | Functional safety solutions for Industrial automation                            | <a href="#">Web site</a> |
| 21                                     |                                        | Functional safety solution for industrial automation                             | <a href="#">Doc</a>      |
| 22                                     |                                        | Introduction to Renesas functional safety for industrial appliance(video)        | <a href="#">Web site</a> |
| 23                                     | Artificial Intelligence (AI)           | AI solutions                                                                     | <a href="#">Web site</a> |
| Training                               |                                        |                                                                                  |                          |
| 24                                     | Training information                   | RA Family Video Library                                                          | <a href="#">Web site</a> |
| 25                                     |                                        | Software & Tool Course solution menu                                             | <a href="#">Web site</a> |
| 26                                     |                                        | RA Family Software&Tool Course(Video Collection)                                 | <a href="#">Web site</a> |
| Partner                                |                                        |                                                                                  |                          |
| 27                                     | Partner information                    | Partner products (system solutions provider)                                     | <a href="#">Web site</a> |
| 28                                     |                                        | 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  |                                | QFN Mounting Manual                                                                                                                                                           | <a href="#">Doc</a>      |
| 6  |                                | Package information (package outline information, mount manual, etc.)                                                                                                         | <a href="#">Web site</a> |
| 7  | <b>Software Design</b>         | RA Flexible Software Package Documentation (Git Hub)                                                                                                                          | <a href="#">Web site</a> |
| 9  | <b>Development environment</b> | Software and Tools                                                                                                                                                            | <a href="#">Web site</a> |
| 10 |                                | How to videos - RA Family Software & Tool Course                                                                                                                              | <a href="#">Web site</a> |
| 11 |                                | 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>Inspection(Application notes)</b> | Renesas flash programmer (GUI tool for PC) | <a href="#">Web site</a> |

## Supportive information

Get help from our technical staff and community.

| # | Content                          | 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 | Jan. 2026 | -           | First edition issued |
|      |           |             |                      |
|      |           |             |                      |

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.