RA4E1 Group
Handbook for RA4E1

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

RA4E1 Group

Contents

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	**Hardware information**	Datasheet	Doc
2		RA Family Flyer	Doc
3		RA Family Brochure	Doc
4	**Products & Solutions**	Video	Web site
5		Blog	Web site
6		Reference designs (Winning combination)	Web site
7		Renesas academy	Web site
8	**Product longevity program (PLP)**	Overview of product longevity program (PLP)	Web site
9		Product selection (product selector) Note: Refer to PLP column in the chart.	Web site
10	**Product Specification Comparison**	RA Family Product Selector	Web site
11		Industrial Networks Brochure	Doc
12		White Paper: Solving IoT Security Issues with Embedded Microcontrollers	Doc
13		White Paper: Security for the Connected World	Doc

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	Doc
2		Technical update (errata information)	Web site
3		Product change notice (PCN)	Web site
4		RA Family NOMENCLATURE (the meaning of character in part number)	Doc
5		Semiconductor reliability handbook	Doc
6		RELIABILITY REPORT	Doc
7		RoHS Product Options → Part Number →Environmental & Export Classifications	Web site
8		Security Design with Arm® TrustZone® using Cortex-M33	Doc
Evaluation board			
9	**Evaluation board (for general purpose)**	Fast Prototyping Board (FPB) (low-price model)	Web site
10	**Solution board Reference design**	AI Kit Development Platform	Web site
Evaluation environment (set up method)			
11	**Setup method**	RA family beginner's guide	Doc
12	**Software tool**	RA Family Development Environment - RA Flexible Software Package (FSP)	Web site
13		Migrating Projects to New FSP Version	Doc
14		FPB - Quick Start Guide	Doc
15		FPB Example Project Bundle	Doc
16		RA smart configurator user's guide (tools for code generation)	Web site
Solution			
17	**Security**	IoT Security	Web site
18		Security key management tool manual	Web site
19		Flexible Software Package (FSP)	Web site
20	**Functional safety**	Functional safety solutions for Industrial automation	Web site
21		Functional safety solution for home appliances	Web site
22		Functional safety solution for industrial automation	Doc
23		Introduction to Renesas functional safety for industrial appliance(video)	Web site
24		Introduction to Renesas functional safety for home appliance (video)	Web site
25	**Artificial Intelligence (AI)**	AI solutions	Web site
Training			
26	**Training information**	RA Family Video Library	Web site
27		Software & Tool Course solution menu	Web site
28		RA Family Software&Tool Course(Video Collection)	Web site
Partner			
29	**Partner information**	Partner products (system solutions provider)	Web site
30		RA Family Partner Ecosystem	Web site

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1.2   Step2: Product Design, Development

This section summarizes useful information for product design and development.

#	Item	Content	Link
1	**Board Design**	Quick design guide	[Doc](#)
2		Design Package of the Fast Prototyping Board, FPB *	[Zip](#)
3		CAD Model 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.	[Web site](#)
4		board simulation model (IBIS)	[Web site](#)
5		Design guide for main clock circuit and Sub-Clock circuit	[Doc](#)
6		Guidelines for full-speed USB2.0 board design	[Doc](#)
7		QFN Mounting Manual	[Doc](#)
8		Package information (package outline information, mount manual, etc.)	[Web site](#)
9	**Software Design**	RA Flexible Software Package Documentation (Git Hub)	[Web site](#)
10	**Development environment**	Software and Tools	[Web site](#)
11		How to videos - RA Family Software & Tool Course	[Web site](#)
12		Supplemental user's manual for E2 /E2 Lite emulator	[Doc](#)

* It requires My Renesas account to access the content.

1.3   Step3: Mass Production

#	Item	Content	Link
1	**Writing a program(Programmer)**	PG-FP6	[Web site](#)
2	**Writing a program(Writing tool)**	Renesas flash programmer (GUI tool for PC)	[Web site](#)
3	**Inspection(Application notes)**	Boundary Scan Description Language (BSDL) file *	[Web site](#)

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Supportive information

Get help from our technical staff and community.

#		Link
1	FAQ (frequently asked inquiries)	Web site
2	RA forum (community)	Web site
3	RA Online Training Modules	Web site
4	Technical support	Web site

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.

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