
RZ/G3E Group

Handbook for RZ/G3E

Introduction

This document compiles useful information for each stage of device selection, development, and Mass production. You can also select what you need for your application from our rich selection of application notes that describe how to use a peripheral function, example applications, how to create a program, and more.

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

Target Device

RZ/G3E 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 for device performance and features (Step1-2) when selecting the device.

1.1.1 Step1-1: Preliminary survey phase

#	Item	Contents	Link
1	Hardware information	Datasheet	Doc
2	Products & Solutions	RZ/G3E Group Home Page	Web site
3		RZ/G3E Group Flyer	Doc
4		RZ Family Brochure	Doc
5		Video	Web site
6		Blog	Web site
7		Renesas Wiki	Web site
8		Reference designs (Winning combination)	Web site

1.1.2 Step1-2: Evaluation phase for device performance and features

#	Item	Contents	Link
User's Manual / Documentation			
1	Document	User's manual: Hardware	Doc
2		User's manual: Hardware (additional document) *1	Doc
3		Additional document for User's Manual (SDHI)	*2
4		RZ Family NOMENCLATURE (Part number guide, the meaning of character in part number)	Doc
5		Semiconductor reliability handbook	Doc
6		RoHS Note: Product Options → Part Number → Package information → RoHS Info	Web site
Evaluation Board			
7	Evaluation Board	Evaluation Kit for RZ/G3E Group (RZ/G3E-EVKIT)	Web site
Evaluation environment (set up method)			
8	Document for Evaluation Board Kit	SMARC EVK: Quick Start Guide (Quick start with HMI SDK)	Doc
9		SMARC Module Board User's Manual	Doc
10		RZ SMARC Carrier Board User's Manual	ZIP file
11	Software resource for Evaluation Board Kit	Board Support Package (BSP) RZ MPU Graphics Library *1 RZ MPU Video Codec Library *1 BSP1.0.0 Pre-built Images *1	Web site
12		Board Support Package V1.0.0 Release Note	Doc
13		SMARC EVK: Linux Start-up Guide	Doc
14		BSP Manual Set	ZIP file
15		RZ Multi-OS Package	Web site
16		RZ Flexible Software Package	Web site
17		RZ MPU Security Package (Linux OS) *1	Web site
		RZ/G HMI SDK (Top Page)	Web site
18		RZ/G HMI SDK (Building the HMI SDK with Yocto)	Web site
19		RZ MPU Qt Package	Web site
20		RZ MPU HTML5 Chromium132 Package	Web site
21		Software Package for AOSP 14: v14.5.1*1	Web site
22	Ubuntu and Debian for RZ MPU Linux	Web site	
Videos & Training			
23	Videos & Training	RZ Family Videos & Training	Web site
Partner			
24	Partner information	Partner products (system solutions provider)	Web site
25		RZ Family Partner Ecosystem	Web site

*1 For access to the contents, it requires My Renesas account and an agreement with click-through license.

*2 Please contact Sales if needed.

1.2 Step2: Product Design, Development

This section summarizes useful information for product design and development.

#	Item	Contents	Link
1	Board Design	PCB Design and Verification Flow (for DDR-IF)	*2
2		PCB Design Checklist	ZIP file
3		PCB Design Guidelines for High-Speed Signal Interfaces	Doc
4		PCB Design Guideline for RGMII Interface	Doc
5		PCB Design Guideline for LPDDR4/LPDDR4X *1 (include Config Generation Tool)	ZIP file
6		PCB verification guide for Core VDD (incl. PDN model)	ZIP file
7		PCB verification guide for LPDDR4/LPDDR4X *1 (including Package Model(S-parameter) and IO Buffer Model (IBIS IO model) of DDR-IF)	ZIP file
8		SMARC Module Board Design Data for 15mmSq (Schematics, Layout, BOM)	ZIP file
9		Carrier Board Design Data (Schematics, Layout, BOM)	ZIP file
10		IBIS *1	ZIP file
11		IBIS-AMI *1	ZIP file
12		High-Speed Interface S-Parameter/IBIS-AMI Model (Application Note)	Doc
13		BSDL	ZIP file
14		Power Consumption Measurement	Doc
15		Power estimation examples	Doc
16		Power calculation sheet and guide	*2
17		Thermal Management Guideline	Doc
18		Mechanical Handling Guideline	Doc
19		Mount Conditions Reflow Soldering Conditions	Doc
20		Mount Conditions Baking Conditions	Doc
21		Lifetime Guideline	Doc
22		Reliability Report	Doc
23		Power Management IC(PMIC)	Web site
24		Clock Generator IC	Web site
25		RZ Family DRAM List	Doc
26	Development Environment	RZ Smart Configurator	Web site
27		Smart Configurator for RZ V2.0.0 installer for Linux	Tool
28		Smart Configurator for RZ V2.0.0 installer for Windows	Tool
29		Smart Configurator for RZ V2.0.0 installer for macOS	Tool
30		Smart Configurator for RZ User's Guide	Doc
31		RZ Series Current Measurement Program (Application Note)	Doc
32		RZ Series Current Measurement Program (Tool)	Tool

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Supportive information

Get help from our technical staff and community.

#	Item	Link
1	FAQ (frequently asked inquiries)	Web site
2	RZ forum (community)	Web site
3	RZ MPU Family Course*	Web site
4	Technical support	Web site

*It requires Renesas Academy account to access the contents.

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Jul.29.2025	-	First edition issued
1.10	Sep.9.2025	3	Added the link of SMARC EVK: Quick Start Guide
1.20	Nov.12.2025	3,4	Added some contents
1.30	Jan.16.2026	3,4	Added the link of HTML5 Chromium132 Package Added the link of Software Package for AOSP 14: v14.5.1 Added the link of Ubuntu and Debian for RZ MPU Added the link of RZ Smart Configurator
1.40	Apr. 10.2026	3,4	Added the link of RZ Flexible Software Package Added the link of RZ/G HMI SDK Added the link of Reliability Report
1.50	May. 20.2026	3,4	Added the link of Quick start Guide (Quick start with HMI SDK) Added the link of IBIS-AMI Added the link of High-Speed Interface S-Parameter/IBIS-AMI Model (Application Note) Added the link of RZ DRAM List Added the link of RZ Current measurement Program