RZ/V2H Group
Handbook for RZ/V2H

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/V2H 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	**Product & Solutions**	RZ/V2H Group Flyer	Doc
3		RZ Family Brochure	Doc
4		Video	Web site
5		Blog	Web site
6		Application Block Diagrams - High-Performance Vision AI System - Single Board Computer with Vision AI - Power Sequencer & I/O Expander for Printers (PPC/MFP) - Autonomous Mobile Robot (AMR) - Unmanned Aerial Vehicle (UAV) - Service Robot - Robotic Standard Arm System - Dexterous Hand	 Web site Web site Web site Web site Web site Web site Web site Web site
7	**Product Specification Comparison**	RZ Family Product Selector	Web site
8		White Paper	Web site
9	**Partner information**	Preferred Partner Program (System solutions provider)	Web site
10		RZ Family Partner Ecosystem	Web site

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

#	Item	Contents	Link
User's Manual / Documentation			
1	**Document**	RZ/V2H Group User's manual: Hardware	Doc
2		RZ/V2H Group User's manual: Hardware (Additional Document)	Doc*2
3		Technical update (errata information)	Web site
4		Product change notice (PCN)	Web site
5		RZ Family Product Part Number Guide (the meaning of character in part number)	Doc
6		Semiconductor reliability handbook	Doc
7		Reliability Report	Doc
Evaluation Board			
8	**Evaluation Board (for General purpose)**	RZ/V2H-EVK Vision AI MPU Evaluation Kit	Web site
9	**Robotic Development Kit**	RZ/V2H Robotic Development Kit (RDK)	Web site
10		Hardware Manual	Doc*1
11		UAV Flight System Architecture for Autonomous Navigation	Doc
12		Robotic Development Kit Design Files	File*1
Evaluation environment (set up method)			
13	**Hardware (Set up EVK)**	RZ/V2H-EVK Hardware Manual	Doc
14		Camera module list for RZ/V series	Doc
15		Camera module for EVK (*) e-con Systems - e-CAM22_CURZH information	Web site
16		Camera module for EVK (*) CSM Solution - IMX415 Board information - IMX415 Board-M12 information - IMX415 Board Mounting kit	Web site Web site Web site
17	**AI SDK**	RZ/V AI Web page - *Software Overview* - *Getting Started* - *How to build RZ/V2H AI SDK Source Code* - *AI Applications Demo How to Use Guide* - *Community* (Community Applications) - *RZ/V Reference Applications*	Web site Web site Web site Web site Web site Web site Web site
18		RZ/V2H AI SDK Overview	Web site
19		RZ/V2H AI SDK Release Note	Doc
20		RZ/V2H AI SDK	File*1
21		RZ/V2H AI SDK Source Code	File*1
22	**AI Applications**	RZ/V AI Web page (*AI Applications*)	Web site
23		RZ/V2H AI Applications Demo SD Image (Version 6.20)	File*1
24	**Linux (Manual set)**	BSP (RTK0EF0045Z9006AZJ-v4.0.5.zip)	File
25		Linux Interface Specification GStreamer User Manual: Software	Doc*1
26	**Linux (Security Package)**	Security Solution Overview	Doc
27		Security Package	File*2
28	**Multi-OS**	RZ/V Multi-OS Package Overview	Web site
29		RZ/V Multi-OS Package Release Note	Doc
30		RZ/V Multi-OS Package Compressed file	File
31		AWO (Always On) Startup Guide	Doc
32		FSP (Flexible Software Package)	Web site
33		FSP Getting Started Guide	Doc
34		Migration Guide for Building Project RZ/FSP v4.x.x Using Existing FSP	Doc

#	Item	Contents	Link
Evaluation environment (set up method)			
35	**ISP Support Package**	ISP Support Package Overview	Web site
36		ISP Support Package Guide	Doc
37		Release Note	Doc*2
38		Image Quality Tuning Guide	Doc*2
39		ISP Support Package (Binary version)	File*1
40		ISP Support Package (Source version)	File*2
41	**ROS2 Support Package**	ROS2 Package Overview	Web site
42		ROS2 Support Package	Web site
43		ROS2 Sample Application Package	Web site
44	**Software Package for AOSP (Android™ Open Source Project)**	RZ/V2H Software Package for AOSP 15: Proprietary Software	File*1
45		RZ/V2H Software Package for AOSP 15: Prebuilt Images	File*1
46		*RZ/V2H Software Package for AOSP 15* (GitHub)	Web site
47	**Various tools**	RUHMI AI compiler (DRP-AI TVM) GitHub	Web site
48		RUHMI AI compiler (DRP-AI TVM) Guideline GitHub Pages	Web site
49		RUHMI AI compiler (DRP-AI TVM) Model list	Web site
50		RUHMI AI compiler (DRP-AI TVM) Getting started	Web site
51		RUHMI AI compiler (DRP-AI TVM) BYOM	Web site
52		DRP-AI Extension Pack (Pruning tool) Manual	Doc
53		DRP-AI Extension Pack (Pruning tool)	File*1
54		DRP-AI Pruning Guideline (GitHub)	Web site
55		AI Navigator: IDE for AI Applications	Web site
56		*AI Navigator Quick Start Guide* (GitHub)	Web site
57		e² studio for RZ Family	Web site
58		Smart Configurator for RZ	Web site
59		Smart Configurator for RZ Release Note	Doc

*1: To access contents of software packages, My Renesas account is required.
*2: NDA required for access to secure site.

1.2 Step2: Product Design, Development

This section summarizes useful information for product design and development.
(Note: To access contents of board design data, My Renesas account is required.)

#	Item	Contents	Link
1	**Board Design**	LPDDR4/4X Controller Setting guide - Setting parameters generation tool (Gen_tool)	Doc*1
2		PCB Design Checklist	Doc*2
3		Pin Function List (Excel sheet)	Doc
4		Power Supply Design Guide	Doc
5		PCB Design guide	Doc*1
6		Thermal design Guide	Doc
7		LSI Design Model (IBIS) - 1 chip IBIS model	Model*1
8		Interface Design Model (Spara, IBIS) - SI simulation models for high-speed interfaces - PI simulation models	Model*1*2
9		CPU Board Design Data	Data
10		EXP Board Design Data	Data
11		Recommended DRAM list	Doc
12		Recommended PMIC - RAA215300 (RAA215300A2GNP#HA2/#HA7)*3	Web site
13		Packaging Information	Web site
14		Package Search (pkg_20143/FBGA 840)	Web site
15		BSDL (Boundary Scan Description Language)	Data*1

*1: NDA required for access to secure site.
*2: Please refer to this checklist during PCB design. It is also recommended to utilize these models for SI/PI simulations. Even when reference board design data are employed, variations in characteristics may occur due to factors such as substrate material properties.
*3: The configuration programs written to the EEPROM differ between “#HA2” and “#HA7”. For recommended part numbers, please refer to the No.2 PCB Design Checklist.

1.3 Supportive Information

#		Link
1	FAQ (frequently asked inquiries)	Web site
2	RZ Family Renesas Wiki	Web site
3	Technical support	Web site

2. Summary of Information by Category

This part shows the information about application notes by the category.
(Note: To access contents of sample code, My Renesas account is required.)

2.1 Overview

#	Category	Description
1	Standard	Hardware Design / Software for start-up / Clock / Voltage / Memory/Others

2.2 RZ/V2H Application Note [Standard]

#	Title	Contents	Sample code
1	RZ/V Getting Started with Flexible Software Package	This note describes how to create an application for the RZ/V using the Renesas Flexible Software Package (FSP).	-
2	RZ/V available partner camera module list	List of camera modules that can be connected to the RZ/V series.	-
3	RZ/V2H Group Lifetime Guideline	This note describes the guidelines for the lifetime of the RZ/V2H group.	-
4	RZ/V2H Group Thermal Design Guide Application Note	This note describes the guidelines for the thermal design of the RZ/V2H group.	-
5	RZ/V2H Group Reference power consumption guide(typ.) for use case	This note describes calculation results of power consumption for several use cases.	-
6	RZ/V2H Group and RZ/V2N Group Power Supply Design Guide	This note describes reference circuits (block diagrams) for power supply design for each boot mode of the RZ/V2H group.	-
7	[NDA]DDRTOP Application Note	This note describes the DRAM access configuration procedure for the LPDDR4/4X controller (DDR), and how to use Gen_tool.	-
8	[NDA]PCB Design Guidelines	This note describes the notices of PCB design for RZ/V2H group.	-
9	RZ/V2H Group CRU Application Note	This note describes setting examples for the CRU function of RZ/V2H Group.	-
10	Visual AI SLAM Solution Guide	This note describes the introduction of the Visual AI SLAM solution, which combines AI and SLAM.	Web site

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Apr. 25, 2025	-	The first edition issued
1.01	Jul. 4, 2025	1. The Table of Information and Materials Needed for Device Selection, Development and Mass Production	
		-	Updated links to the latest versions of each content
		2	No.6 New reference design (Power Sequencer & I/O Expander), added
		3	No.7 Reliability report, added
			No.10 Camera module list, added
			No.12 Link to CSM.SOL camera module information, added
			No.29 ISP support package guide, added
1.02	Oct. 3, 2025	1. The Table of Information and Materials Needed for Device Selection, Development and Mass Production	
		-	Updated links to the latest versions of each content
		2	No.6 Five reference designs, added
		3	No.13 Software Overview, How to Use Guide, Community, Reference Applications, added
			No.31 IQ Tuning Guide, added
			ROS2 support package, added
		4	No.37 TVM guideline, added
			No.43, No.44 AI Navigator, added
		5	No.2 PCB design checklist, added
			No.6 Note 2, added
			No.9 Recommended DRAM list, No.10 Recommended PMIC, No.13 BSDL, added
			1.3 Step3: Mass Production, deleted
		2. Summary of Information by Category	
		6	No.8 CRU Application Note, No.9 Visual AI SLAM Solution Guide, added
1.03	Jan 14, 2026	1. The Table of Information and Materials Needed for Device Selection, Development and Mass Production	
		-	Updated links to the latest versions of each content
		2	No.6 Robot Vacuum Cleaner, deleted
		3	No.18 Document number, modified
		4	No.36, No.37 “RUHMI AI compiler”, added
			No.38 to No.40, added
			DRP-AI Translator i8, deleted
1.04	Aug 31, 2026	1. The Table of Information and Materials Needed for Device Selection, Development and Mass Production	
		-	Updated links to the latest versions of each content
		3	RZ/V2H RDK contents, added
			No.16 Links of CSM camera module, modified
			No.22, 23 AI Applications contents, added
			No.34 FSP Migration Guide, added
		4	No.39 ISP support package (Binary ver.), added
			Software package for AOSP 15, added
		5	No.3 Pin list and No.4 Power supply design guide, added
		2. Summary of Information by Category	
		6	No.6 Power supply design guide, added

This handbook reflects information available as of Aug 31, 2026. For the latest information, please also refer to the product pages on our website (RZ/V2H - Quad-core Vision AI MPU with DRP-AI3 Accelerator and High-Performance Real-time Processor | Renesas).