

RZ/V2N Group

Handbook for RZ/V2N

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/V2N 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		RZ/V2N Group Flyer	Doc
3		RZ Family Brochure	Doc
4		Video	Web site
5		Blog	Web site
6	Product & Solutions	Reference designs (Winning Combination) - Collaborative Robot (Cobot) - AI-Enabled Surveillance Camera - AI Dash Camera - RZ/V2N Based Raspberry Pi® Single Board Computer	Web site Web site Web site Web site
7	Product Specification	RZ Family Product Selector	Web site
8	Comparison	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/V2N Group User's manual: Hardware	Doc
2		RZ/V2N 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/V2N-EVK Vision AI MPU Evaluation Kit V2.0	Web site
Evaluation environment (set up method)			
9	Hardware (Set up EVK)	RZ/V2N-EVK V2.0 Hardware Manual	Doc
10		Camera module list for RZ/V series	Doc
11		Camera module for EVK (*) e-con Systems - e-CAM22_CURZH information	Web site
12		Camera module for EVK (*) CSM Solution - IMX415 Board information - IMX415 Board-M12 information - IMX415 Board Mounting kit	Web site Web site Web site
13	AI SDK	RZ/V AI Web page - Software Overview - Getting Started - How to build RZ/V2N 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
14		RZ/V2N AI SDK Overview	Web site
15		RZ/V2N AI SDK Release Note	Doc
16		RZ/V2N AI SDK	File *1
17	AI Applications	RZ/V2N AI SDK Source Code	File *1
18		RZ/V AI Web page (AI Applications)	Web site
19		RZ/V2N AI Applications Demo SD Image (Version 6.30)	File *1
20	Linux (Manual set)	BSP Manual (RTK0EF0045Z9006AZJ-v4.0.5.zip)	File
21		Linux Interface Specification GStreamer User Manual: Software	Doc *1
22	Linux (Security Package)	Security Solution Overview	Doc
23		Security Package	File *2
24	Multi-OS	RZ/V Multi-OS Package Overview	Web site
25		RZ/V Multi-OS Package Release Note	Doc
26		RZ/V Multi-OS Package Compressed file	File
27		AWO (Always On) Startup Guide	Doc
28		FSP (Flexible Software Package)	File
29		FSP Getting Started Guide	Doc
30		Migration Guide for Building Project RZ/FSP v4.x.x Using Existing FSP	Doc
31	ISP Support Package	ISP Support Package Overview	Web site
32		ISP Support Package Guide	Doc
33		Release Note	Doc *2
34		Image Quality Tuning Guide*3	Doc *2
35		ISP Support Package (Binary version)	File *1
36		ISP Support Package (Source version)	File *2

Evaluation environment (set up method)			
37	ROS2 Support Package	ROS2 Package Overview	Web site
38		ROS2 Support Package	Web site
39		ROS2 Sample Application Package	Web site
40		RUHMI AI compiler (DRP-AI TVM) GitHub	Web site
41	Various tools	RUHMI AI compiler (DRP-AI TVM) .Guideline GitHub Pages	Web site
42		RUHMI AI compiler (DRP-AI TVM) Model list	Web site
43		RUHMI AI compiler (DRP-AI TVM) Getting started	Web site
44		RUHMI AI compiler (DRP-AI TVM) BYOM	Web site
45		DRP-AI Extension Pack (Pruning tool) Manual	Doc
46		DRP-AI Extension Pack (Pruning tool)	File ^{*1}
47		DRP-AI Pruning Guideline (GitHub)	Web site
48		AI Navigator: IDE for AI Applications	Web site
49		<i>AI Navigator Quick Start Guide</i> (GitHub)	Web site
50		e ² studio for RZ Family	Web site
51		Smart Configurator for RZ	Web site
52		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.

*3: This guide is for RZ/V2H, but it can also be applied to RZ/V2N.

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		RZ/V2N Evaluation Board Kit V1.0 Design data and Manual	Data
12		Recommended DRAM list	Doc
13		Recommended PMIC RAA215300 (RAA215300A2GNP#HA7)	Web site
14		Packaging Information	Web site
15		Package Search (pkg_20143/FBGA 840)	Web site
16		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.

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/V2N 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/V2N Group Lifetime Guideline	This note describes the guidelines for the lifetime of the RZ/V2N group.	-
4	RZ/V2N Group Thermal Design Guide Application Note	This note describes the guidelines for the thermal design of the RZ/V2N group.	-
5	RZ/V2N 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/V2N 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/V2N group.	-

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 (Raspberry Pi Single Board Computer), added
		3	No.3 Technical update, added
			No.4 Product change notice (PCN), 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. 10, 2025	2. Summary of Information by Category	
		5	No.5 Reference power consumption guide, added
		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	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
1.03	Jan. 14, 2026	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	
		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	No.8 "V2.0", added
			No.9 "V2.0", added
1.04	Aug 31, 2026	4	No.36, No.37 "RUHMI AI compiler", added
			No.38, No.39, added
			DRP-AI Translator i8, deleted
		5	No.9, modified to V1.0 design data and manual
		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 (Collaborative Robot), added
		3	No.12 Links of CSM camera module, modified
			No.18, 19 AI Applications contents, added
			No.30 FSP Migration Guide, added
			No.35 ISP support package (Binary ver.), added
1.05	Sep 30, 2026	4	No.42 RZ/V2N Model list, 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/V2N - 15TOPS Quad-Core Vision AI MPU with 2-Camera Connection and Excellent Power Efficiency | Renesas](#)).