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

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 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/V2N Group Flyer	Doc
3		RZ Family Brochure	Doc
4		Video	Web site
5		Blog	Web site
6		Reference designs (Winning Combination) - AI-Enabled Surveillance Camera - AI Dash Camera - RZ/V2N Based Raspberry Pi® Single Board Computer	 Web site Web site Web site
7	**Product Specification Comparison**	RZ Family Product Selector	Web site
8		White Paper: Manage the Increased Scale and Complexity of Vision AI with Greater Power Efficiency of Mid-Range RZ/V2N MPU	Doc
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	Web site
Evaluation environment (set up method)			
9	**Hardware (Set up EVK)**	RZ/V2N-EVK Hardware Manual	Doc
10		Camera module list for RZ/V series	Doc
11		Camera module for EVK (*) External link - e-CAM22_CURZH information	Web site
12		Camera module for EVK (*) External link - V2H IMX415 Board information - V2H IMX415 Board-M12 information	Web site Web site
13	**AI SDK**	RZ/V AI Web page - *Getting Started* - *How to build RZ/V2N AI SDK Source Code*	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		RZ/V2N AI SDK Source Code	File*1
18	**Linux (Manual set)**	BSP (RTK0EF0045Z94001AZJ-v1.0.3.zip)	File
19		Linux Interface Specification GStreamer User Manual: Software	Doc*1
20	**Linux (Security Package)**	Security Solution Overview	Doc
21		Security Package	File*2
22	**Multi-OS**	RZ/V Multi-OS Package Overview	Web site
23		RZ/V Multi-OS Package Release Note	Doc
24		RZ/V Multi-OS Package Compressed file	File
25		AWO (Always On) Startup Guide	Doc
26		FSP (Flexible Software Package)	File
27		FSP Getting Started Guide	Doc
28	**ISP Support Package**	ISP Support Package Overview	Web site
29		ISP Support Package Guide	Doc
30		Release Note	Doc*2
31		ISP Support Package (supported IMX415)	File*2
32	**Various tools**	DRP-AI TVM (GitHub)	Web site
33		DRP-AI Translator i8 Installer	File*1
34		DRP-AI Translator i8 Release Note	Doc
35		DRP-AI Extension Pack (Pruning tool) Manual	Doc
36		DRP-AI Extension Pack (Pruning tool)	File*1
37		DRP-AI Pruning Guideline (GitHub)	Web site
38		e² studio Installer for Windows	File*1
39		e² studio Installer for Linux	File*1
40		Smart Configurator for RZ	File*1
41		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*
2		PCB Design guide	Doc*
3		Thermal design Guide	Doc
4		LSI Design Model (IBIS) - 1 chip IBIS model	Model*
5		Interface Design Model (Spara, IBIS) - SI simulation models for high-speed interfaces - PI simulation models	Model*
6		CPU Board Design Data	Data
7		EXP Board Design Data	Data
8		Sub Board Design Data	Data
9		Packaging Information	Web site
10		Package Search (pkg_20143/FBGA 840)	Web site

* NDA required for access to secure site.

1.3 Step3: Mass Production

#	Item	Contents	Link
	Writing a program (Programmer)	TBD	-
	Writing a program (Tool)	TBD	-

1.4 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	[NDA]DDRTOP Application Note	This note describes the DRAM access configuration procedure for the LPDDR4/4X controller (DDR), and how to use Gen_tool.	-
7	[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
		2. Summary of Information by Category	
		5	No.5 Reference power consumption guide, added

This handbook reflects information available as of July 4, 2025. 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).