

Handbook for RX72T

The information/materials required at the time of product development summarized and listed for each development phase.

Please use it as a handbook when developing.

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Step1: MCU selection


	Item	Content	Link
1	Hardware information	Datasheet	Doc
2	Products & Solutions	Video	Web site
3		Blog	Web site
4		Reference designs (Winning combination)	Web site
5	Product longevity program (PLP)	Overview of product longevity program (PLP)	Web site
6		Product selection (product selector) Note: Refer to PLP column in the chart.	Web site
7	Replacement information	Differences of specification among RX products	Doc
8		[SH/H8/H8S/H8SX/M16C/V850] → RX microcontroller migration guide	Doc
9		Design guide for migration between RX family differences in package external form	Doc

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Step2: Designing and evaluating

Item		Content	Link
Common			
1	Hardware information	User's manual: Hardware	Doc
2		RX family hardware manual guidance (how to read user's manual: hardware)	Doc
3		Technical update (errata information) *Select "Technical Update" from the options to the left of the Documentation section.	Web site
4		Product change notice (PCN) *Select "Product change notice" from the options to the left of the Documentation section.	Web site
5		Part number guide for RX family product (the meaning of character in part number)	Doc
6		Semiconductor reliability handbook	Doc
7		RELIABILITY REPORT	Doc
8		RoHS Product Options → Part Number → Package information → RoHS Info	Web site
9	Software information	Instruction set for RXv3 core architecture (user's manual)	Doc
10	Evaluation board (for general purpose)	Renesas starter kit+ (all functions could be evaluated)	Web site
11	Solution board	Communication board MC-COM renesas flexible motor control communication board	Web site
12		Inverter board Evaluation system for BLDC motor	Web site
13		CPU card CPU card for motor control	Web site
14		Functional safety Industrial automation functional safety reference board	Web site
15	Partner information	Partner products (system solutions provider)	Web site
16		Partner products (trusted technology partners that deliver commercial-grade building blocks)	Web site

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Item	Content	Link
Hardware design		
1	Design information	Hardware design guide Web site
2	Design guide for main clock circuit and Sub-Clock circuit	Doc
3	Notes regarding high-temperature operation	Doc
4	Guidelines for full-speed USB2.0 board design	Doc
5	Board simulates ECAD, board simulation model (IBIS) Note: ECAD can be found by clicking on the respective part number of the product options. 	Web site
6	Other	Resonator and matching circuit information Web site
7	Package information (package outline information, mount manual, etc.)	Web site
8	Development environment	Supplemental user's manual for E1/E20/E2 Lite/E2 emulator Doc
Software design		
1	Software information	Getting started with the RX family development environment Web site
2	Development tools for RX family	Web site
3	Software environment (OS, middleware, drivers)	Web site
4	RX smart configurator user's guide (tools for code generation)	Doc
5	Training information	Smart configurator tutorial - create a LED blinking program using RX family MCU Web site
6	How to use tools and solutions (video clips)	Web site
7	CC-RX compiler tutorial - How to use trigonometric function unit (TFU) of RX	Web site
8	System design	Examples of transitioning to low power consumption modes Doc Sample

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		Item	Content	Link	
Solution					
1	Motor and Inverter	Portal page	Motor and inverter control solutions	Web site	
2	Control	Application notes	Vector control for permanent magnet synchronous motor with encoder (algorithm)	Doc	
3			Sensorless vector control for permanent magnet synchronous motor (algorithm)	Doc	
4			Vector control for permanent magnet synchronous motor with encoder for evaluation system for BLDC motor	Doc Sample	
5			Sensorless vector control of a permanent magnet synchronous motor for the evaluation system for BLDC motor	Doc Sample	
6			Vector control for permanent magnet synchronous motor with encoder (implementation) (control over three motors) for evaluation system for BLDC motor	Doc Sample	
7			Sensorless vector control for permanent magnet synchronous motor (implementation) (control over four motors) for evaluation system for BLDC motor	Doc Sample	
8			Vector control for permanent magnet synchronous motor with magnet sensor and inductive sensor (for evaluation system for BLDC motor, structure update version)	Doc Sample	
9			Digital power conversion (totem pole interleaved PFC)	Doc Sample	
10			Digital power conversion (uninterruptible power system (UPS))	Doc Sample	
11			Digital power conversion (uninterruptible power system (LLC))	Doc Sample	
12			Tool	Renesas motor workbench	Web site
13			Other information	Position control of 3 motors with a single MCU (video)	Web site
14	Speed control of 4 motors with a single MCU (video)	Web site			

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Item		Content		Link	
Solution					
15	Security	Portal page	RX Family TSIP Security Solutions	Web site	
16		Support tools for secure functions	Security key management tool manual	Web site	
17		Hardware Security IP Driver	TSIP (Trusted Secure IP) driver (binary version)	Doc	
				Sample	
18	Other information	Video	Web site		
19	GUI	Portal page	Graphical user interface (GUI) solutions	Web site	
20		Support information	RX family LCD-related FAQ list	Web site	
21		Application notes	QE for display GUI display application development guide using serial connection LCD	Doc	
22				GUI sample program using serial LCD and emWin library	Doc
					Sample
23	Module for image rendering (emWin)	Doc			
			Sample		
24	Functional safety	Portal page	Functional safety solutions for Industrial automation	Web site	
25			Functional safety solution for home appliances	Web site	
26		Other information	Functional safety solution for industrial automation	Doc	
27			Introduction to Renesas functional safety for industrial appliance(video)	Web site	
28			Introduction to Renesas functional safety for home appliance (video)	Web site	
Support					
1	Support information	FAQ (frequently asked inquiries)		Website	
2		RX forum (community)		Website	
3		Ask technical/sales support (support tickets)		Website	

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Step3: Mass production

Item		Content		Link
1	Writing a program	Programmer	PG-FP6	Web site
2		Writing tool	Renesas flash programmer (GUI tool for PC)	Web site
3	Firmware update	Application notes	Renesas MCU firmware update design policy	Doc
4			Firmware update module using firmware integration technology	Doc Sample
5			How to manage the access control for flash memory	Doc
6	Inspection	Design information	Boundary scan description language (BSDL) file	Not available

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