

RX13T handbook for engineers

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	Web site
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)	Web site	
4		Product change notice (PCN)	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 RXv1 core architecture (user's manual)	Doc	
10	Solution board	Communication board	Web site	
11		Inverter board	Web site	
12		CPU card	CPU card for motor control	Web site
13			User's manual	Doc
14	Partner information	Partner products (system solutions provider)	Web site	
15		Partner products (trusted technology partners that deliver commercial-grade building blocks)	Web site	
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	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	
5	Other	Resonator and matching circuit information	Web site	
6		Package information (package outline information, mount manual, etc.)	Web site	
7	Development environment	Supplemental user's manual for E1/E20/E2 Lite/E2 emulator	Doc	

Item		Content	Link	
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	System design	Examples of transitioning to low power consumption modes	Doc Sample	
Solution				
1	Motor and inverter control	Portal page	Motor and inverter control solutions	Web site
2		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 magnet sensor and inductive sensor for the evaluation system for BLDC motor	Doc Sample
7			120-degree conducting control of a permanent magnet synchronous motor for the evaluation system for BLDC motor	Doc Sample
8			PFC-Controlled and sensorless Vector-Controlled by ceiling FAN inverter board	Doc Sample
9			Vector control of Three-Phase induction motor used in driving a fan	Doc Sample
10			Vector control of Three-Phase induction motor used in driving a pump	Doc Sample

	Item		Content	Link
Solution				
11	Motor and inverter control	Tool	Renesas motor workbench	Web site
12	GUI	Portal page	Graphical user interface (GUI) solutions	Web site
13		Support information	RX family LCD-related FAQ list	Web site
14		Application notes	QE for display GUI display application development guide using serial connection LCD	Doc
15		Portal page	GUI sample program using serial LCD and emWin library	Doc Sample
16		Support information	Module for image rendering (emWin)	Doc Sample
Support				
1	Support information		FAQ (frequently asked inquiries)	Web site
2			RX forum (community)	Web site
3			Ask to technical support Note: Please click login in the upper right corner	Web site

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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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