Handbook for RX66T

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
		Inverter board	Evaluation system for BLDC motor	Web_site
12		CPU card	CPU Card for motor control	Web_site
13			User’s manual for CPU Card	Doc
14		Functional safety	Industrial automation functional safety reference board	Web site
15		Industrial network	Solution kit for PROFINET	Web site
16	Partner information		Partner products (system solutions provider)	Web site
17			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	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

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Item			Content	Link
Solution				
4	Motor and inverter control	Application notes	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			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
11			Power supply control of a Three-Level inverter by using SiC power elements	Doc
12			Sensorless vector control for IPMSM over the whole speed range	Doc
				Sample
13			Digital power conversion (totem pole interleaved PFC)	Doc
				Sample
14			Digital power conversion (uninterruptible power system (UPS))	Doc
				Sample
15			Digital power conversion (uninterruptible power system (LLC))	Doc
				Sample
16		Tool	Renesas motor workbench	Web site
17		Other information	Position control of 3 motors with a single MCU (video)	Web site

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Item			Content	Link
Solution				
18	Security	Portal page	RX Family TSIP Security Solutions	Web site
19		Support tools for secure functions	Security key management tool manual	Web site
20		Hardware Security IP Driver	TSIP (Trusted Secure IP) driver (binary version)	Doc
				Sample
21		Other information	Video	Web site
22	GUI	Portal page	Graphical user interface (GUI) solutions	Web site
23		Support information	RX family LCD-related FAQ list	Web site
24		Application notes	QE for display GUI display application development guide using serial connection LCD	Doc
25			GUI sample program using serial LCD and emWin library	Doc
				Sample
26			Module for image rendering (emWin)	Doc
				Sample
27	Functional safety	Portal page	Functional safety solutions for Industrial automation	Web site
28			Functional safety solution for home appliances	Web site
29		Other information	Functional safety solution for industrial automation	Doc
30			Introduction to Renesas functional safety for industrial appliance(video)	Web site
31			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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