

## Handbook for RX231,RX230

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	<a href="#">Doc</a>
2	Products & Solutions	Video	<a href="#">231: Web site</a>
			<a href="#">230: Web site</a>
3		Blog	<a href="#">231: Web site</a>
			<a href="#">230: Web site</a>
4	Reference designs (Winning combination)	<a href="#">231: Web site</a>	
		<a href="#">230: Web site</a>	
5	Product longevity program (PLP)	Overview of product longevity program (PLP)	<a href="#">Web site</a>
6		Product selection (product selector)	<a href="#">231: Web site</a>
		Note: Refer to PLP column in the chart.	<a href="#">230: Web site</a>
7	Replacement information	Differences of specification among RX products	<a href="#">Doc</a>
8		[SH/H8/H8S/H8SX/M16C/V850] → RX microcontroller migration guide	<a href="#">Doc</a>
9		Design guide for migration between RX family differences in package external form	<a href="#">Doc</a>

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## Step2: Designing and evaluating

Item		Content	Link
<b>Common</b>			
1	Hardware information	User's manual: Hardware	<a href="#">Doc</a>
2		RX family hardware manual guidance (how to read user's manual: hardware)	<a href="#">Doc</a>
3		Technical update (errata information) *Select "Technical Update" from the options to the left of the Documentation section.	<a href="#">231: Web site</a> <a href="#">230: Web site</a>
4		Product change notice (PCN) *Select "Product change notice" from the options to the left of the Documentation section.	<a href="#">231: Web site</a> <a href="#">230: Web site</a>
5		Part number guide for RX family product (the meaning of character in part number)	<a href="#">231: Doc</a> <a href="#">230: Doc</a>
6		Semiconductor reliability handbook	<a href="#">Doc</a>
7		RELIABILITY REPORT	<a href="#">231: Doc</a> <a href="#">230: Doc</a>
8		RoHS Product Options → Part Number → Package information → RoHS Info	<a href="#">231: Web site</a> <a href="#">230: Web site</a>
9		Software information	Instruction set for RXv2 core architecture (user's manual)
10	Evaluation board (for general purpose)	Renesas starter kit	<a href="#">w/TSIP:Web site</a>
11		(all functions could be evaluated)	<a href="#">wo/TSIP:Web site</a>
12		Target board (low-cost model)	<a href="#">Web site</a>
13	Solution board	Industrial automation functional safety reference board	<a href="#">Web site</a>
14	Partner information	Partner products (system solutions provider)	<a href="#">Web site</a>
15		Partner products (trusted technology partners that deliver commercial-grade building blocks)	<a href="#">Web site</a>
<b>Hardware design</b>			
1	Design information	Hardware design guide	<a href="#">Web site</a>
2		Design guide for main clock circuit and Sub-Clock circuit	<a href="#">Doc</a>
3		Notes regarding high-temperature operation	<a href="#">Doc</a>
4		Guidelines for full-speed USB2.0 board design	<a href="#">RX231:Doc</a>
5	Board simulates	ECAD, board simulation model (IBIS) Note: ECAD can be found by clicking on the respective part number of the product options. 	<a href="#">231: Web site</a> <a href="#">230: Web site</a>

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Item		Content		Link	
<b>Hardware design</b>					
6	Other	Resonator and matching circuit information		<a href="#">231: Web site</a>	
7		Package information (package outline information, mount manual, etc.)		<a href="#">Web site</a>	
8	Development environment	Supplemental user's manual for E1/E20/E2 Lite/E2 emulator		<a href="#">Doc</a>	
<b>Software design</b>					
1	Software information	Getting started with the RX family development environment		<a href="#">Web site</a>	
2		Development tools for RX family		<a href="#">Web site</a>	
3		Software environment (OS, middleware, drivers)		<a href="#">Web site</a>	
4		RX smart configurator user's guide (tools for code generation)		<a href="#">Doc</a>	
5	Training information	Smart configurator tutorial - create a LED blinking program using RX family MCU		<a href="#">Web site</a>	
6		How to use tools and solutions (video clips)		<a href="#">Web site</a>	
7	System design	Examples of transitioning to low power consumption modes		<a href="#">Doc</a> <a href="#">Sample</a>	
<b>Solution</b>					
1	Security	Portal page	RX Family TSIP Security Solutions	<a href="#">Web site</a>	
2		Support tools for secure functions	Security key management tool manual	<a href="#">Web site</a>	
3		Hardware Security IP Driver	TSIP (Trusted Secure IP) driver (binary version)		<a href="#">Doc</a> <a href="#">Sample</a>
4			Other information	Video	<a href="#">Web site</a>
5	GUI	Portal page	Graphical user interface (GUI) solutions	<a href="#">Web site</a>	
6		Support information	RX family LCD-related FAQ list	<a href="#">Web site</a>	
7		Application notes	QE for display GUI display application development guide using serial connection LCD		<a href="#">Doc</a>
8			GUI sample program using serial LCD and emWin library		<a href="#">Doc</a> <a href="#">Sample</a>
9			Module for image rendering (emWin)		<a href="#">Doc</a> <a href="#">Sample</a>

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Item		Content		Link
<b>Solution</b>				
10	Capacitive touch	Portal page	Capacitive touch sensor solution	<a href="#">Web site</a>
11		Design guide	First step guide (CTSU capacitive touch introduction guide)	<a href="#">Doc</a>
12			The electrode design guide for capacitive touch (CSTU)	<a href="#">Doc</a>
13			Capacitive touch noise immunity guide	<a href="#">Doc</a>
14			The development guide for capacitive touch applications using QE and FIT	<a href="#">Doc</a>
15	Capacitive touch	Application notes	The development guide for 3D gesture recognition application using QE for capacitive touch	<a href="#">Doc</a>
16			How to use QE for capacitive touch for Renesas RX family with IAR EWRX	<a href="#">Doc</a>
17			QE for capacitive touch advanced mode parameter guide	<a href="#">Doc</a>
18			3D Gesture demo set (hardware)	<a href="#">Doc</a>
19			3D Gesture demo set sample software	<a href="#">Doc</a> <a href="#">Sample</a>
20	Functional safety	Portal page	Functional safety solutions for Industrial automation	<a href="#">Web site</a>
21			Functional safety solution for Home appliances	<a href="#">Web site</a>
22		Other information	Functional safety solution for industrial automation	<a href="#">Doc</a>
23			Introduction to renesas functional safety for industrial automation (video)	<a href="#">Web site</a>
24			Introduction to renesas functional safety for home appliance (video)	<a href="#">Web site</a>
25	Voice recognition	Portal page	Voice recognition solutions	<a href="#">Web site</a>
26		Application notes	Voice recognition demo board	<a href="#">Doc</a>
<b>Support</b>				
1	Support information	FAQ (frequently asked inquiries)		<a href="#">Website</a>
2		RX forum (community)		<a href="#">Website</a>
3		Ask technical/sales support (support tickets)		<a href="#">Website</a>

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## Step3: Mass production

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

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