

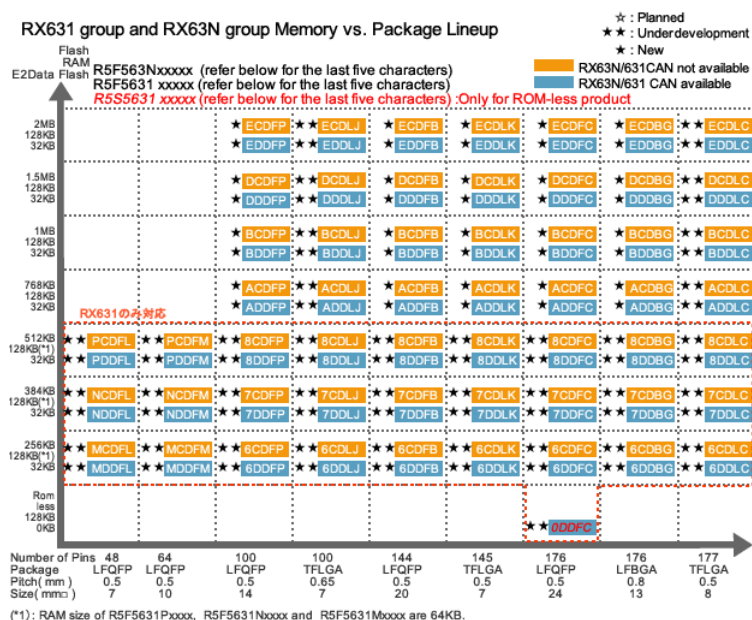

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RX63N, 631

Overview of the RX63N/RX631 Group

The RX63N/RX631 Group incorporates communication functions suitable for networking equipment, such as Ethernet controller, USB 2.0 full-speed (function, host, or OTG selectable), and CAN. In addition, with a RTC (Real-Time Clock) that can operate on a dedicated power supply as a low power feature, standby power consumption can be reduced by approximately 90% compared to existing products. The selection of on-chip memory has been expanded from ROMless to 2 MB, and even smaller-sized packages are available. This makes possible mounting in anything from large-scale systems to small-scale/small-space devices.

Memory vs. Package Lineup



RX63N/RX631 Group Block Diagrams

RX63N

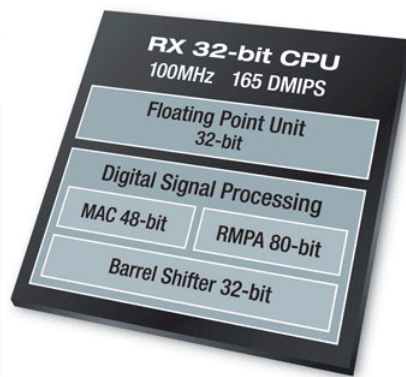


Memory

Zero-wait Flash
up to 2MB

SRAM
up to 128KB

Data Flash
32KB



System

Data Management
DTC/ExDMA/DMA

Interrupt Cont.
16 levels 16 pins

Clock Generation
OSC PLL IRC

POR/LVD

Analog

ADC
12-bit 21 ch

ADC
10-bit 8 ch

DAC
10-bit 2 ch

Temp Sensor

Timers

MTU2
16-bit 6 ch

2 x TPU
16-bit 6 ch

2 x PPG
4-bit 4 gp

2 x TMR
8-bit 2 ch

2 x CMT
16-bit 2 ch

WDT
8-bit 1 ch

I-WDT
14-bit 1 ch

RTC w/Vbat
Calendar/Anti-tamper

Communication

Ethernet 10/100
MAC with DMA

2 x USB 2.0 FS
Host/Device/OTG

3 x CAN 2.0B

4 x I²C

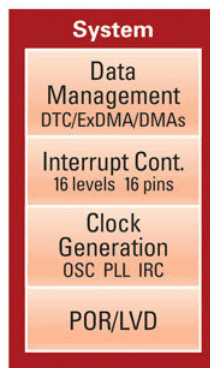
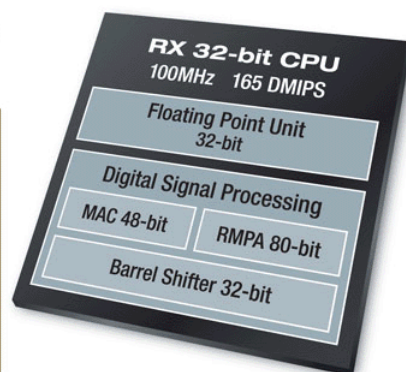
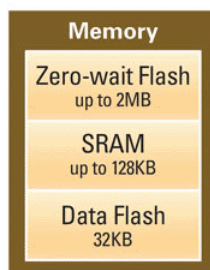
13 x SCI

3 x SPI

External Bus
with SDRAM

GPIO

RX631



RX63N/RX631 Group Specifications

item	RX63N/RX631 Group
CPU core	RX CPU General registers: 32-bit x 16 Multiplier: 32-bit multiplier Divider: Yes Multiply-accumulator: Yes (two types: memory-to-memory operations and register-to-register operations)
Maximum operating frequency	100MHz
Power supply voltage	2.7 to 3.6V
Floating-point processing unit	Single-precision floating-point processing unit (Supports add/subtract/compare/multiply/divide and other instructions)
Flash ROM (for program storage)	Max. 2MB
Flash ROM (for data storage)	Max. 32KB
RAM	Max. 128KB
On-chip peripheral functions	External bus: 177/176-pin(32bit@50MHz), 145/144-pin (16bit@50MHz), Under 100-pin PKG (16bit@25MHz) DMAC: 4 channels Direct memory access controller designed exclusively (EXDMA) x 2 channels: Over 100-pin PKG Only Data transfer controller (DTC) 16-bit multifunction timer pulse unit: 177/176/145/144- pin: 12 channels; Under 100-pin: 6 channels Multifunction timer pulse unit 2: 6 channels Port output enable 2 Programmable pulse generator: Max. 32-bit output 8-bit timer: 4 channels Compare match timer: 4 channels

	Real-time clock (RTC): Except 48-pin PKG Watchdog timer Independent watchdog timer Serial communication interface (SCIc): 177/176/145/144-pin: 12 channels; 100-pin: 8 channels; 64-pin: 5 channels; 48-pin: 4 channels Serial communication interface (SCId) I ² C bus interface: 177/176/145/144-pin: 4 channels; 100-pin: 2 channels; 64/48-pin: 1 channel Serial peripheral interface (RSPi): 177/176/145/144-pin: 3 channels; Under 100-pin: 2 channels USB 2.0 full-speed (Host/function/OTG): 177/176-pin: 2 channels; up to 145-pin: 1 channels Ethernet controller*1 DMA controller for Ethernet controller (EDMAC)*1 CAN*2 : Max. 3 channels IEBus x 1 ch (IEB) 12-bit A/D converter: 177/176/145/144-pin: 21 channels; 100-pin: 14 channels; 64-pin: 12 channels; 48-pin: 8 channels 10-bit A/D converter: Over 100-pin: 8 channels 10-bit D/A converter: 177/176/145/144-pin: 2 channels; 100/64-pin: 1 channel Temperature sensor CRC calculator Power-on reset circuit (POR) Voltage detection circuit (LVD)
On-chip debugging function	Yes (with trace function)
Low power consumption modes	4 modes Sleep mode All-module clock stop mode Software standby mode Deep software standby mode
Packages	LQFP64, LQFP80, LGA85, LQFP100, LGA100, LQFP144, LGA145, BGA176, LQFP176, LGA177, LQFP48

*1 RX63N Group (Over 100-pin PKG) only.

*2 Part number differs between with CAN/without CAN versions.

e-Learning

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Product Lineup:



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167 matches

(1 to 100 are displayed.)

Items per page

1 2

Compare	Part No	Buy or Sample	Program Memory (KB)	RAM (KB)	Pin Count	Operating Voltage Min (V)	Production Status	Package Code
Document								
☐	R5F5631BDDFB	-	1024	128	144	2.7	Mass Production	PLQP0144KA-A (FP-144LV)
☐	R5F5631BCDFB	-	1024	128	144	2.7	Mass Production	PLQP0144KA-A (FP-144LV)
☐	R5F5631NBDDFB	-	1024	128	144	2.7	Mass Production	PLQP0144KA-A (FP-144LV)
☐	R5F5631NBCDFB	-	1024	128	144	2.7	Mass Production	PLQP0144KA-A (FP-144LV)
☐	R5F5631NADDFB	-	768	128	144	2.7	Mass Production	PLQP0144KA-A (FP-144LV)
☐	R5F5631NACDFB	-	768	128	144	2.7	Mass Production	PLQP0144KA-A (FP-144LV)
☐	R5F5631PDDFM	-	512	64	64	2.7	Under Development	PLQP0064KB-A (FP-64KV)
☐	R5F5631NEDDFC	-	2048	128	176	2.7	Mass Production	PLQP0176KB-A (FP-176EV)
☐	R5F5631NECDFC	-	2048	128	176	2.7	Mass Production	PLQP0176KB-A (FP-176EV)

		-	1536	128	176	2.7	Mass Production	PLQP0176KB -A (FP-176EV)
		-	1536	128	176	2.7	Mass Production	PLQP0176KB -A (FP-176EV)
		-	1024	128	176	2.7	Mass Production	PLQP0176KB -A (FP-176EV)
		-	1024	128	176	2.7	Mass Production	PLQP0176KB -A (FP-176EV)
		-	768	128	176	2.7	Mass Production	PLQP0176KB -A (FP-176EV)
		-	768	128	176	2.7	Mass Production	PLQP0176KB -A (FP-176EV)
		-	2048	128	176	2.7	Mass Production	PLQP0176KB -A (FP-176EV)
		-	2048	128	176	2.7	Mass Production	PLQP0176KB -A (FP-176EV)
		-	1536	128	176	2.7	Mass Production	PLQP0176KB -A (FP-176EV)
		-	1536	128	176	2.7	Mass Production	PLQP0176KB -A (FP-176EV)
		-	1024	128	176	2.7	Mass Production	PLQP0176KB -A (FP-176EV)
		-	1024	128	176	2.7	Mass Production	PLQP0176KB -A (FP-176EV)
		-	768	128	176	2.7	Mass Production	PLQP0176KB -A (FP-176EV)
		-	768	128	176	2.7	Mass Production	PLQP0176KB -A (FP-176EV)
		-	2048	128	144	2.7	Mass Production	PLQP0144KA -A (FP-144LV)
		-	2048	128	144	2.7	Mass Production	PLQP0144KA -A (FP-144LV)
		-	1536	128	144	2.7	Mass Production	PLQP0144KA -A (FP-144LV)
		-	1536	128	144	2.7	Mass Production	PLQP0144KA -A (FP-144LV)
		-	2048	128	144	2.7	Mass Production	PLQP0144KA -A (FP-144LV)
		-	2048	128	144	2.7	Mass Production	PLQP0144KA -A (FP-144LV)
		-	1536	128	144	2.7	Mass Production	PLQP0144KA -A (FP-144LV)
		-	1536	128	144	2.7	Mass Production	PLQP0144KA -A (FP-144LV)
		-	768	128	144	2.7	Mass Production	PLQP0144KA -A (FP-144LV)

		R5F5631ACDFB	-	768	128	144	2.7	Mass Production	PLQP0144KA -A (FP-144LV)
		R5F5631DDDFP	-	1536	128	100	2.7	Mass Production	PLQP0100KB -A (FP-100UV)
		R5F5631BDDFP	-	1024	128	100	2.7	Mass Production	PLQP0100KB -A (FP-100UV)
		R5F5631BCDFP	-	1024	128	100	2.7	Mass Production	PLQP0100KB -A (FP-100UV)
		R5F5631NADDFP	-	768	128	100	2.7	Mass Production	PLQP0100KB -A (FP-100UV)
		R5F5631ADDFP	-	768	128	100	2.7	Mass Production	PLQP0100KB -A (FP-100UV)
		R5F5631ACDFP	-	768	128	100	2.7	Mass Production	PLQP0100KB -A (FP-100UV)
		R5F5631NACDFP	-	768	128	100	2.7	Mass Production	PLQP0100KB -A (FP-100UV)
		R5F5631EDDFP	-	2048	128	100	2.7	Mass Production	PLQP0100KB -A (FP-100UV)
		R5F5631ECDFP	-	2048	128	100	2.7	Mass Production	PLQP0100KB -A (FP-100UV)
		R5F5631DCDFP	-	1536	128	100	2.7	Mass Production	PLQP0100KB -A (FP-100UV)
		R5F5631NEDDFP	-	2048	128	100	2.7	Mass Production	PLQP0100KB -A (FP-100UV)
		R5F5631NECDFP	-	2048	128	100	2.7	Mass Production	PLQP0100KB -A (FP-100UV)
		R5F5631NDDDFP	-	1536	128	100	2.7	Mass Production	PLQP0100KB -A (FP-100UV)
		R5F5631NDCDFP	-	1536	128	100	2.7	Mass Production	PLQP0100KB -A (FP-100UV)
		R5F5631NBDDFP	-	1024	128	100	2.7	Mass Production	PLQP0100KB -A (FP-100UV)
		R5F5631NBCDFP	-	1024	128	100	2.7	Mass Production	PLQP0100KB -A (FP-100UV)
		R5F5631EDDBG	-	2048	128	176	2.7	Mass Production	PLBG0176GA -A (BP-176V)
		R5F5631NADDBG	-	768	128	176	2.7	Mass Production	PLBG0176GA -A (BP-176V)
		R5F5631NACDBG	-	768	128	176	2.7	Mass Production	PLBG0176GA -A (BP-176V)
		R5F5631NEDDBG	-	2048	128	176	2.7	Mass Production	PLBG0176GA -A (BP-176V)
		R5F5631NECDBG	-	2048	128	176	2.7	Mass Production	PLBG0176GA -A (BP-176V)
		R5F5631NDDDBG	-	1536	128	176	2.7	Mass Production	PLBG0176GA -A (BP-176V)

		R5F5631NDCDBG	-	1536	128	176	2.7	Mass Production	PLBG0176GA -A (BP-176V)
		R5F5631NBDDBG	-	1024	128	176	2.7	Mass Production	PLBG0176GA -A (BP-176V)
		R5F5631NBCDBG	-	1024	128	176	2.7	Mass Production	PLBG0176GA -A (BP-176V)
		R5F5631ECDBG	-	2048	128	176	2.7	Mass Production	PLBG0176GA -A (BP-176V)
		R5F5631DDDBG	-	1536	128	176	2.7	Mass Production	PLBG0176GA -A (BP-176V)
		R5F5631DCDBG	-	1536	128	176	2.7	Mass Production	PLBG0176GA -A (BP-176V)
		R5F5631BDDBG	-	1024	128	176	2.7	Mass Production	PLBG0176GA -A (BP-176V)
		R5F5631BCDBG	-	1024	128	176	2.7	Mass Production	PLBG0176GA -A (BP-176V)
		R5F5631ADDBG	-	768	128	176	2.7	Mass Production	PLBG0176GA -A (BP-176V)
		R5F5631ACDBG	-	768	128	176	2.7	Mass Production	PLBG0176GA -A (BP-176V)
		R5F5631PCDFL	-	512	64	48	2.7	Under Development	PLQP0048KB -A (48P6Q-A)
		R5F5631PDDFL	-	512	64	48	2.7	Under Development	PLQP0048KB -A (48P6Q-A)
		R5F5631NCDFL	-	384	64	48	2.7	Under Development	PLQP0048KB -A (48P6Q-A)
		R5F5631NDDFL	-	384	64	48	2.7	Under Development	PLQP0048KB -A (48P6Q-A)
		R5F5631MCDFL	-	256	64	48	2.7	Under Development	PLQP0048KB -A (48P6Q-A)
		R5F5631MDDFL	-	256	64	48	2.7	Under Development	PLQP0048KB -A (48P6Q-A)
		R5F5631PCDFM	-	512	64	64	2.7	Under Development	PLQP0064KB -A (FP-64KV)
		R5F5631NCDFM	-	384	64	64	2.7	Under Development	PLQP0064KB -A (FP-64KV)
		R5F5631NDDFM	-	384	64	64	2.7	Under Development	PLQP0064KB -A (FP-64KV)
		R5F5631MCDFM	-	256	64	64	2.7	Under Development	PLQP0064KB -A (FP-64KV)
		R5F5631MDDFM	-	256	64	64	2.7	Under Development	PLQP0064KB -A (FP-64KV)
		R5S56310DDFC	-	0	128	176	2.7	Under Development	PLQP0176KB -A (FP-176EV)
		R5F5631ECDLJ	-	2048	128	100	2.7	Under Development	PTLG0100JA -A (100F0G)

		R5F5631EDDLJ	-	2048	128	100	2.7	Under Development	PTLG0100JA-A (100F0G)
		R5F5631DCDLJ	-	1536	128	100	2.7	Under Development	PTLG0100JA-A (100F0G)
		R5F5631DDDLJ	-	1536	128	100	2.7	Under Development	PTLG0100JA-A (100F0G)
		R5F5631BCDLJ	-	1024	128	100	2.7	Under Development	PTLG0100JA-A (100F0G)
		R5F5631BDDLJ	-	1024	128	100	2.7	Under Development	PTLG0100JA-A (100F0G)
		R5F5631NECDLJ	-	2048	128	100	2.7	Under Development	PLQP0100KB-A (FP-100UV)
		R5F5631NEDDLJ	-	2048	128	100	2.7	Under Development	PLQP0100KB-A (FP-100UV)
		R5F5631NCDLJ	-	1536	128	100	2.7	New Products	PLQP0100KB-A (FP-100UV)
		R5F5631NDDDLJ	-	1536	128	100	2.7	New Products	PLQP0100KB-A (FP-100UV)
		R5F5631NBCDLJ	-	1024	128	100	2.7	Under Development	PLQP0100KB-A (FP-100UV)
		R5F5631NBDDLJ	-	1024	128	100	2.7	Under Development	PLQP0100KB-A (FP-100UV)
		R5F5631NACDLJ	-	768	128	100	2.7	Under Development	PLQP0100KB-A (FP-100UV)
		R5F5631NADDLJ	-	768	128	100	2.7	Under Development	PLQP0100KB-A (FP-100UV)
		R5F5631ECDLK	-	2048	128	145	2.7	Mass Production	PTLG0145KA-A (145F0G)
		R5F5631EDDLK	-	2048	128	145	2.7	Mass Production	PTLG0145KA-A (145F0G)
		R5F5631DCDLK	-	1536	128	145	2.7	Mass Production	PTLG0145KA-A (145F0G)
		R5F5631DDDLK	-	1536	128	145	2.7	Mass Production	PTLG0145KA-A (145F0G)
		R5F5631BCDLK	-	1024	128	145	2.7	Mass Production	PTLG0145KA-A (145F0G)
		R5F5631BDDLK	-	1024	128	145	2.7	Mass Production	PTLG0145KA-A (145F0G)
		R5F5631ACDLK	-	768	128	145	2.7	Mass Production	PTLG0145KA-A (145F0G)
		R5F5631ADDLK	-	768	128	145	2.7	Mass Production	PTLG0145KA-A (145F0G)
		R5F5631NECDLK	-	2048	128	145	2.7	Mass Production	PTLG0145KA-A (145F0G)