

RENESAS TECHNICAL UPDATE

TOYOSU FORESIA, 3-2-24, Toyosu, Koto-ku, Tokyo 135-0061, Japan
Renesas Electronics Corporation

Product Category	MPU/MCU		Document No.	TN-RX*-A203A/E	Rev.	1.00
Title	Addition of G Version (Topr = -40 to 105°C) Products to RX71M Group		Information Category	Technical Notification		
Applicable Product	RX71M Group	Lot No.	Reference Document	RX71M Group User's Manual: Hardware Rev.1.10 (R01UH0493EJ0110)		
		All				

The G-version products (Topr = -40 to 105°C) described as “in planning” in the RX71M Group User’s Manual: Hardware Rev.1.10 are started to be shipped.

This document describes a list and electrical characteristics of the products to be added as shown below.

To use the G-version products, please contact our sales office.

1. List of G-version Products

The following 48 products are added to the RX71M group MCU lineup.

Table 1. List of G-version Products (1/2)

Part No.	Package	Code Flash Memory Capacity	RAM Capacity	Data Flash Memory Capacity	Operating Frequency (max)	Encryption Module	SDHI
R5F571MLCGFC	PLQP0176KB-A	4 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Not supported
R5F571MLDGFC	PLQP0176KB-A	4 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Available
R5F571MLGGFC	PLQP0176KB-A	4 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Not supported
R5F571MLHGFC	PLQP0176KB-A	4 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Available
R5F571MJCGFC	PLQP0176KB-A	3 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Not supported
R5F571MJDGFC	PLQP0176KB-A	3 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Available
R5F571MJGGFC	PLQP0176KB-A	3 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Not supported
R5F571MJHGFC	PLQP0176KB-A	3 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Available
R5F571MCGFC	PLQP0176KB-A	2.5 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Not supported
R5F571MGDGFC	PLQP0176KB-A	2.5 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Available
R5F571MGGGFC	PLQP0176KB-A	2.5 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Not supported
R5F571MGHGFC	PLQP0176KB-A	2.5 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Available
R5F571MFCGFC	PLQP0176KB-A	2 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Not supported
R5F571MFDGFC	PLQP0176KB-A	2 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Available
R5F571MFGGFC	PLQP0176KB-A	2 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Not supported
R5F571MFHGFC	PLQP0176KB-A	2 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Available
R5F571MLCGFB	PLQP0144KA-A	4 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Not supported
R5F571MLDGFB	PLQP0144KA-A	4 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Available
R5F571MLGGFB	PLQP0144KA-A	4 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Not supported
R5F571MLHGFB	PLQP0144KA-A	4 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Available

Table 1. List of G-version Products (2/2)

Part No.	Package	Code Flash Memory Capacity	RAM Capacity	Data Flash Memory Capacity	Operating Frequency (max)	Encryption Module	SDHI
R5F571MJCGB	PLQP0144KA-A	3 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Not supported
R5F571MJDGB	PLQP0144KA-A	3 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Available
R5F571MJGGB	PLQP0144KA-A	3 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Not supported
R5F571MJHGB	PLQP0144KA-A	3 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Available
R5F571MGCGB	PLQP0144KA-A	2.5 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Not supported
R5F571MGDGB	PLQP0144KA-A	2.5 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Available
R5F571MGGGB	PLQP0144KA-A	2.5 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Not supported
R5F571MGHGB	PLQP0144KA-A	2.5 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Available
R5F571MFCGB	PLQP0144KA-A	2 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Not supported
R5F571MFDGB	PLQP0144KA-A	2 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Available
R5F571MFGGB	PLQP0144KA-A	2 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Not supported
R5F571MFHGB	PLQP0144KA-A	2 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Available
R5F571MLCGB	PLQP0100KB-A	4 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Not supported
R5F571MLDGB	PLQP0100KB-A	4 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Available
R5F571MLGGB	PLQP0100KB-A	4 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Not supported
R5F571MLHGB	PLQP0100KB-A	4 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Available
R5F571MJCGB	PLQP0100KB-A	3 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Not supported
R5F571MJDGB	PLQP0100KB-A	3 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Available
R5F571MJGGB	PLQP0100KB-A	3 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Not supported
R5F571MJHGB	PLQP0100KB-A	3 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Available
R5F571MGCGB	PLQP0100KB-A	2.5 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Not supported
R5F571MGDGB	PLQP0100KB-A	2.5 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Available
R5F571MGGGB	PLQP0100KB-A	2.5 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Not supported
R5F571MGHGB	PLQP0100KB-A	2.5 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Available
R5F571MFCGB	PLQP0100KB-A	2 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Not supported
R5F571MFDGB	PLQP0100KB-A	2 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Not supported	Available
R5F571MFGGB	PLQP0100KB-A	2 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Not supported
R5F571MFHGB	PLQP0100KB-A	2 Mbytes	512 Kbytes	64 Kbytes	240 MHz	Available	Available

2. Electrical Characteristics

The following extra DC characteristics with the new products are added to the G-version products.

Table 2. DC Characteristics (3) (for G-version products)

Conditions: VCC = AVCC0 = AVCC1 = VREFH0 = VCC_USB = 2.7 to 3.6 V, 2.7 V ≤ VREFH0 ≤ AVCC0,
 VCC_USBA = AVCC_USBA = 3.0 to 3.6 V,
 VSS = AVSS0 = AVSS1 = VREFL0 = VSS_USB = VSS1_USBA = VSS2_USBA = PVSS_USBA = AVSS_USBA = 0 V,
 T_a = T_{opr}

Item			Symbol	Min.	Typ.	Max.	Unit	Test Condition		
Supply current*1	High-speed operating mode	Max.*2	I _{cc} *3	—	—	250	mA	ICLK = 240 MHz PCLKA = 120 MHz PCLKB = 60 MHz PCLKC = 60 MHz PCLKD = 60 MHz FCLK = 60 MHz BCLK = 120 MHz BCLK pin = 60 MHz		
		Notmal		Peripheral function clock signal supplied*4	—	52			—	
				Peripheral function clock signal stopped*4	—	28			—	
		CoreMark		Peripheral function clock signal stopped*4	—	41			—	
		Sleep mode: The clock signal to peripheral modules is supplied*4		—	37	137				
		All-module-clock-stop mode (reference value)		—	15	108				
		Increased by BGO operation*5		Reading from the code flash memory while the data flash memory is being programmed	—	7			—	
				Reading from the code flash memory while the code flash memory is being programmed	—	10			—	
		Low-speed operating mode 1: Supply of the clock signal to peripheral modules is stopped*4		—	4.4	—			All clocks 1 MHz	
		Low-speed operating mode 2: Supply of the clock signal to peripheral modules is stopped*4		—	3.0	—			All clocks 32.768 kHz	
	Software standby mode		—	1.9	83					
	Deep software standby mode	Power supplied to standby RAM and USB resume detecting unit (USB0 only)		—	25	108	μA			
		Power not supplied to standby RAM and USB resume detecting unit (USB0 only)	Power-on reset circuit and low-power consumption function disabled*6	—	12.5	36.4				
			Power-on reset circuit and low-power consumption function enabled*7	—	3.1	20.0				
		Increased by RTC operation	When a crystal resonator for low clock loads is in use	—	0.6	—				
When a crystal resonator for standard clock loads is in use			—	2.0	—					
RTC operating while VCC is off (with the battery backup function, only the RTC and sub-clock oscillator operate)		When a crystal resonator for low clock loads is in use	—	0.9	—	V _{BATT} = 2.0 V, VCC = 0 V				
			—	1.6	—	V _{BATT} = 3.3 V, VCC = 0 V				
	When a crystal resonator for standard clock loads is in use	—	1.7	—	V _{BATT} = 2.0 V, VCC = 0 V					
		—	3.3	—	V _{BATT} = 3.3 V, VCC = 0 V					

- Note 1. Supply current values are with all output pins unloaded and all input pull-up MOSs in the off state.
- Note 2. Supply of the clock signal to peripheral modules is stopped in this state. This does not include operations as BGO (background operations).
- Note 3. I_{cc} depends on f(ICLK) as follows. (ICLK : PCLKA : PCLKB/PCLKC/PCLKD : BCLK : BCLK pin = 4 : 2 : 1 : 2 : 1 when EXTAL = 24 MHz)
 I_{cc} Max. = 0.47 × f + 137 (max. operation in high-speed operating mode)
 I_{cc} Typ. = 0.09 × f + 7 (normal operation in high-speed operating mode)
 I_{cc} Typ. = 0.40 × f + 4 (ICLK 1 MHz Max.) (low-speed operating mode 1)
 I_{cc} Max. = 0.14 × f + 103 (sleep mode)
- Note 4. This does not include operations as BGO (background operations). Whether supply of the clock signal to peripheral modules continues or is stopped only depends on the state determined by the settings of the bits in module stop control registers A to D. The setting for the peripheral module clock stopped state is FCLK = BCLK = PCLKA = PCLKB = PCLKC = PCLKD = BCLK pin

= 3.75 MHz (division by 64).

- Note 5. This is the increase for programming or erasure of the code flash memory (limitations apply to the combinations of ranges in which writing proceed) or data flash memory during program execution in the code flash memory.
- Note 6. The low power consumption function is disabled and DPSBYCR.DEEPCUT[1:0] = 01b.
- Note 7. The low power consumption function is enabled and DPSBYCR.DEEPCUT[1:0] = 11b.