To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: http://www.renesas.com

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Renesas Electronics Corporation

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RENESAS TECHNICAL UPDATE

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Product Category	MPU&MCU		Document No.	TN-16C-A150A/E	Rev.	1.00
Title	M16C/62P Group (M16C/62P), M16C/6N4, M16C/6N5, M16C/6H, M16C/6V Groups Precautions When Using the PM11 Bit (Port P3_7 to P3_4 Function Select Bit)		Information Category	Technical Notification		
Applicable Product	M16C/62P Group (M16C/62P), M16C/6N4 Group, M16C/6N5 Group, M16C/6H Group (M306H3FCFP, M306H3MC-XXXFP, M306H5FGFP, M306H5MG-XXXFP, M306H5MC-XXXFP, M306H6M8-XXXFP) M16C/6V Group (M306V8FJFP)	Lot No. –	Reference Document	–		

Note the following 2 points when using the PM11 bit (port P3_7 to P3_4 function select bit) in the PM1 register with “1” (port function).

1. Rewrite P3_7 to P3_4, PD3_7 to PD3_4 Bits

1.1 Precautions

Indeterminate values are read from the P3_7 to P3_4, PD3_7 to PD3_4 bits by reading the P3 and PD3 registers when the PM01 to PM00 bits in the PM0 register are set to “01b” (memory expansion mode) or “11b”(microprocessor mode) and setting the PM11 bit to “1”.
Also, Incorrect values are written to the P3_7 to P3_4, PD3_7 to PD3_4 bits by executing the read-modify-write instruction to the P3 and PD3 registers and the port state may be changed. Therefore, do not use these instructions.

1.2 Countermeasures

Use the MOV instruction when rewriting the P3 and PD3 registers (including the case that the size specifier is “.W” and the P2 and PD2 registers are rewritten).

2. Output P3_7 to P3_4 Pins

2.1 Precautions

When the PM01 to PM00 bits are rewritten, "L” is output from the P3_7 to P3_4 pins during 0.5 cycles of the BCLK by setting the PM01 to PM00 bits in the PM0 register to “01b” (memory expansion mode) or “11b” (microprocessor mode) from “00b” (single-chip mode) after setting the PM11 bit to “1”.
Figure 1 shows the Output example of P3_7 to P3_4 pins when entering memory expansion mode after setting PM11 bit to “1”.

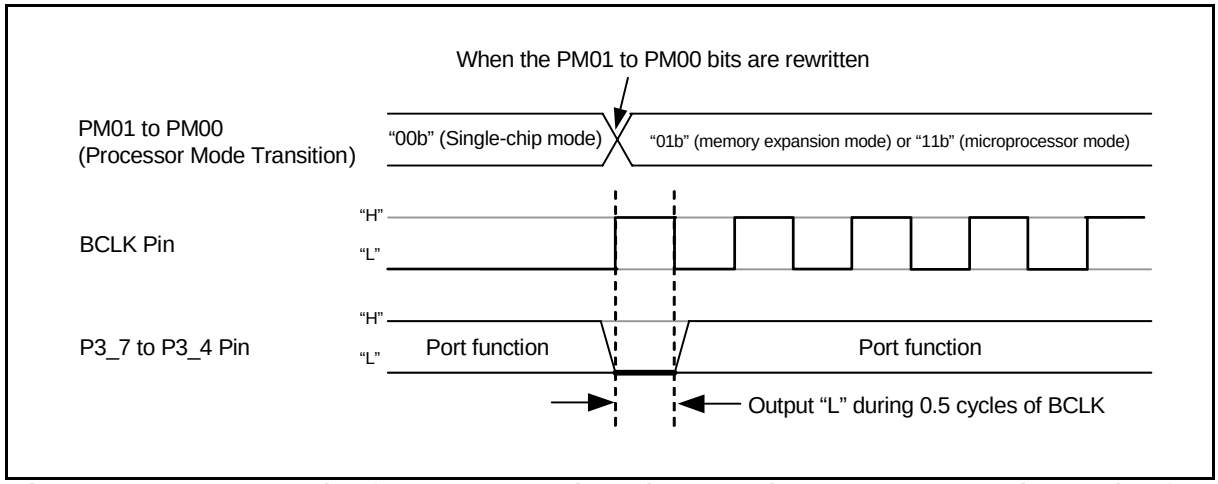

Figure 1. Output Example of P3_7 to P3_4 Pins When Entering Memory Expansion Mode After Setting PM11 Bit to “1”

2.2 Countermeasures

When changing the PM01 to PM00 bits from “00b” to “01b” or “11b” by setting the PM11 bit to “1”.

- If “H” is applied from the external and P3_7 to P3_4 bits are selected as the input ports, signals conflict when switching the PM01 to PM00 bits.
- If “H” is output and the P3_7 to P3_4 bits are selected as the output ports, “L” is output during 0.5 cycles of the BCLK when switching the PM01 to PM00 bits.

As for the external devices which have problems if “L” is output during 0.5 cycles of the BCLK as described above, allocate them to the ports other than the P3_7 to P3_4 pins or insert a resistor.

3. Applicable Products

M16C/62P Group (M16C/62P)
M16C/6N4 Group
M16C/6N5 Group
M16C/6H Group (M306H3FCFP, M306H3MC-XXXFP, M306H5FGFP, M306H5MG-XXXFP, M306H5MC-XXXFP, M306H6M8-XXXFP)
M16C/6V Group (M306V8FJFP)