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.

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RENESAS TECHNICAL NEWS

No. M16C-107-0309

M16C/62P, M16C/26, and M16/6K9
Precautions when Using Stop Mode

Classification	Concerned Products
Corrections and supplementary explanation of document √ Notes Knowhow Others	M16C/62P M16C/26 M16C/6K9

1. Precautionary Note

Take notes of three following precautions when using stop mode.

1. 1 Precautions when using the voltage down detection interrupt to exit stop mode(Note 1)

Do not set the CM10 bit in the CM1 register to "1" (stop mode) with setting the VC13 bit in the VCR1 register to "1" (VCC1≥Vdet 4) when a voltage down detection interrupt in the voltage detection circuit is used under the following settings:

- the VC27 bit in the VCR2 register to "1" (voltage down detection circuit enabled)
- the D40 bit in the D4INT register to "1" (voltage down detection interrupt enabled)
- the D41 bit to "1" (use voltage down detection interrupt to exit stop mode)

If the microcomputer enters stop mode under these conditions, a voltage down detection interrupt is immediately generated and the microcomputer exits stop mode. In addition, the program may not operate correctly after exiting stop mode.

Note 1: Does not apply to M16C/6K9.

1. 2 Precautions when using the $\overline{\text{NMI}}$ interrupt

Do not generate the $\overline{\text{NMI}}$ interrupt after setting the CM10 bit in the CM1 register to "1" (stop mode) and entering stop mode.

if the microcomputer enters to stop mode, the program may not operate correctly when the microcomputer exits stop mode due to the $\overline{\text{NMI}}$ interrupt.

1. 3 Precautions when entering stop mode from low speed mode

Do not set the CM10 bit in the CM1 register to "1" (stop mode) when the microcomputer is in low-speed mode under the following settings:

- the CM04 bit in the CM0 register is set to "1" (sub clock oscillation)
- the CM07 bit in the CM0 register is set to "1" (sub clock)

if the microcomputer enters to stop mode from low speed mode, the program may not operate correctly when the microcomputer exits stop mode due to an interrupt.

2. Countermeasure

2. 1 Countermeasure for “Precautions when using the voltage down detection interrupt to exit stop mode”

When using the voltage down detection interrupt in the voltage detection circuit under the following settings, set the CM10 bit in the CM1 register to “1” (stop mode) while the VC13 bit in the VCR1 register is set to “0” (VCC1<Vdet4):

- the VC27 bit in the VCR2 register is set to “1” (voltage down detection circuit enabled)
- the D40 bit in the D4INT register is set to “1” (voltage down detection interrupt enabled)
- the D41 bit is set to “1” (use voltage down detection interrupt to exit stop mode)

2. 2 Countermeasure for “Precautions when using the $\overline{\text{NMI}}$ interrupt”

Do not use the $\overline{\text{NMI}}$ interrupt to exit stop mode.

2. 3 Countermeasure for “Precautions when entering stop mode from low-speed mode”

Set the CM10 bit in the CM1 register to “1” (stop mode) after setting the CM05 bit in the CM0 register to “1” (main clock stop) and entering low power dissipation mode. Alternatively, set the CM10 bit in the CM1 register to “1” (stop mode) after setting the CM07 bit to “0” (main clock) and entering high-speed mode or low-speed mode.

3. Affected Products

These precautions apply to the following products. Products not listed are not affected.

M16C/62P

Affected Products	
Flash Memory version	M30627FHPGP, M30626FHPFP, M30626FHPGP M30625FGPGP, M30624FGPFP, M30624FGPGP, M30620FCPFP, M30620FCPGP, M30622F8PFP, M30622F8PGP
Mask ROM version	M30626MHP-XXXFP, M30626MHP-XXXGP, M30627MHP-XXXGP, M30624MHP-XXXFP, M30624MHP-XXXGP, M30625MHP-XXXGP, M30622MHP-XXXFP, M30622MHP-XXXGP, M30623MHP-XXXGP, M30626MWP-XXXFP, M30626MWP-XXXGP, M30627MWP-XXXGP, M30624MWP-XXXFP, M30624MWP-XXXGP, M30625MWP-XXXGP, M30624MGP-XXXFP, M30624MGP-XXXGP, M30625MGP-XXXGP

M16C/26

Affected Products	
Flash Memory version	M30262F3GP, M30262F4GP, M30262F6GP M30262F8GP

M16C/6K9(Note 2)

Affected Products	
Flash Memory version	M306K9FCLRP

Note 2: Does not include “Precautions when using the voltage down detection interrupt to exit stop mode”.