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-108-0309

M16C/62P, M16C/26, and M16C/6K9
Precautions when Using Wait 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 four following precautions when using wait mode.

1. 1 Precautions when entering wait mode from medium speed mode or ring oscillator mode[Note 1]

Do not enter wait mode when the main clock or ring oscillator clock is selected as the CPU clock of which division is set by the CM06 bit in the CM0 register, and the CM16 and CM17 bits in the CM1 register. The program may not operate correctly if the microcomputer exits wait mode by an interrupt after entering wait mode on condition that the CPU clock is divided.

Note 1: M16C/6K9 Group does not have ring oscillator mode.

1. 2 Precautions when entering wait mode while the CM02 bit is set to "1" (peripheral function clock stopped in wait mode)

Do not enter wait mode under the following conditions as the program may not operate correctly when the microcomputer exits wait mode due to an interrupt.
- the CM05 bit in the CM0 register is set to "0" (main clock oscillation) and
- the CM02 bit is set to "1" (peripheral function clock stops in wait mode).

1. 3 Precautions when generating an $\overline{\text{NMI}}$ interrupt

Do not generate an $\overline{\text{NMI}}$ interrupt after entering wait mode as the program may not operate correctly if the microcomputer exits wait mode due to an $\overline{\text{NMI}}$ interrupt.

1. 4 Precautions when using a voltage down detection interrupt to exit wait mode[Note 2]

Do not generate a voltage down detection interrupt after entering wait mode as the program may not operate correctly when the microcomputer exits wait mode due to the voltage down detection interrupt.

Note 2: Does not apply to M16C/6K9.

2. Countermeasure

2. 1   Countermeasure for "Precautions when entering wait mode from medium speed mode or ring oscillator mode".

When entering wait mode while the main clock or ring oscillator is selected as the CPU clock, set the CM06 bit in the CM0 register to "0", the CM16 bit in the CM1 register to "0" and the CM17 bit to "0". Do not divide the CPU clock.

2. 2   Countermeasure for "Precautions when entering wait mode while the CM02 bit is set to "1" (peripheral function clock stops in wait mode)".

Set CM02 bit to "0" (peripheral function clock does not stop in wait mode) when the CM05 bit in the CM0 register is set to "0" (main clock oscillation).

2. 3   Countermeasure for "Precautions when generating an $\overline{\text{NMI}}$ interrupt". Do not use the $\overline{\text{NMI}}$ interrupt to exit wait mode.

2. 4   Countermeasure for "Precautions when generating the voltage down detection interrupt to exit wait mode".

Do not use voltage down detection interrupt to exit wait mode.

3. Affected Products

3. 1   Products affected by "Precautions when entering wait mode from medium speed mode or ring oscillator mode".

This precaution applies 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

Affected Products	
Flash Memory version	M306K9FCLRP

3. 2　Products affected by "Precautions when entering wait mode while the CM02 bit is set to "1" (peripheral function clock stops in wait mode)"
This precaution applies to the following products. Products not listed are not affected.

M16C/62P

Affected Products	
Flash Memory version	All products
Mask ROM version	All products

M16C/26

Affected Products	
Flash Memory version	M30262F3GP, M30262F4GP, M30262F6GP M30262F8GP

M16C/6K9

Affected Products	
Flash Memory version	M306K9FCLRP

3. 3　Products affected by "Precautions when generating an $\overline{\text{NMI}}$ interrupt"
This precaution applies 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

Affected Products	
Flash Memory version	M306K9FCLRP

3. 4   Products affected by "Precautions when generating a voltage down detection interrupt to exit wait mode"

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