

To our customers,

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## Old Company Name in Catalogs and Other Documents

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On April 1<sup>st</sup>, 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>

April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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# RENESAS TECHNICAL UPDATE

Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan  
RenesasTechnology Corp.

Product Category	MPU & MCU		Document No.	TN-740-A113A/E	Rev.	1.00
Title	740 Series, 38000 Series Notes on Watchdog Timer in Middle-speed Mode		Information Category	Technical Notification		
Applicable Product	3807 Group, 3850 Group 3850H Group, 3850A Group 3851 Group, 3886 Group 7515 Group, 7516 Group 7531 Group, 7532 Group 7534 Group, 7536 Group	Lot No.	Reference Document	--		

Products in applicable groups have been added for the technical update (MAEC TECHNICAL NEWS TN-M740-33-0211) issued in November, 2002.

The following are usage notes concerning the use of the watchdog timer in the middle-speed mode for the applicable products of the groups listed below (see Tables 1 and 2).

<Attached Document>

MAEC TECHNICAL NEWS TN-M740-33-0211

## 1. Usage Notes

The internal reset may not be generated correctly in the middle-speed mode, depending on the underflow timing of the watchdog timer. When using the watchdog timer, operate the MCU in any mode other than the middle-speed mode (high-speed, low-speed or double-speed mode (\*)).

Double-speed mode (\*): Selectable for Groups of 7531, 7532, 7534 and 7536

## 2. Applicable Products

Table 1 Applicable Products (1)

Group	Applicable products
3807 Group	M38072M2-XXXFP M38073M4-XXXFP M38077M8-XXXFP M38078MC-XXXFP M38079MF-XXXFP M38079MFD-XXXFP M38079SFP M38073E4-XXXFP M38073E4FP M38079EF-XXXFP M38079EFD-XXXFP M38079EFD-XXXFP M38079EFP M38073E4FS M38079EFP
3850 Group	M38503M2-XXXFP/SP M38503M4-XXXFP/SP M38503M4D-XXXFP/SP M38503E4-XXXFP/SP M38503E4FP/SP/SS
3850H Group	M38504M6-XXXFP/SP M38507M8-XXXFP/SP M38503M2H-XXXFP/SP M38503M4H-XXXFP/SP M38504E6-XXXFP/SP M38504E6FP/SP/SS M38507F8FP/SP
3850A Group (applicable products added)	M38503M2A-XXXFP/SP M38503M4A-XXXFP/SP M38504M6A-XXXFP/SP M38507M8A-XXXFP/SP M38507F8AFP/SP M38503G4A-XXXFP/SP M38503G4AFP/SP

Table 2 Applicable Products (2)

Group	Applicable products
3851 Group	M38513M4-XXXFP/SP M38514M6-XXXFP/SP M38517M8-XXXFP/SP M38513E4-XXXFP/SP M38513E4FP/SP/SS M38514E6-XXXFP/SP M38514E6FP/SP/SS M38517F8FP/SP
3886 Group	M38867M8A-XXXHP M38867SAHP M38867E8A-XXXHP M38867E8AHP M38867E8AFS
7515 Group	M37515M4-XXXHP M37515E4-XXXHP M37515E4HP M37515E4FS
7516 Group	M37516M4-XXXHP M37516M4H-XXXKP M37516M6-XXXHP M37516M6H-XXXKP M37516M8-XXXHP M37516E6-XXXHP M37516E6HP/FS M37516F8HP
7531 Group	M37531M4-XXXFP/GP/SP M37531M4T-XXXFP/GP/SP M37531M4V-XXXGP M37531M8-XXXFP/GP/SP M37531M8T-XXXFP/GP M37531E4FP/GP/SP M37531E4T-XXXGP M37531E4V-XXXGP M37531E8FP/SP
7532 Group	M37532M4-XXXFP/GP M37532E8FP
7534 Group	M37534M4-XXXFP/GP/SP M37534E4GP M37534E8FP/SP
7536 Group	M37536M4-XXXSP M37536E8SP

# MAEC TECHNICAL NEWS

No. M740-33-0211

## 740 and 38000 Series Notes on Watchdog Timer in Middle-speed mode

**Classification**Corrections and supplementary  
explanation of document

✓ Notes

Knowhow

Others

**Concerned Products**3807 group, 3850 group, 3851 group, 3886 group,  
7515 group, 7516 group, 7531 group, 7532 group,  
7534 group, 7536 group

The following are notes concerning the use of the watchdog timer in the middle-speed mode for the concerned products of the groups listed below. (see Tables 1, 2)

**[Notes]**

The internal reset may not be generated correctly in the middle-speed mode, depending on the underflow timing of the watchdog timer.

When using the watchdog timer, operate the MCU in any mode other than the middle-speed mode (i.e., high-speed, low-speed or double-speed mode<sup>(\*)</sup>).

Double-speed mode<sup>(\*)</sup>: Selectable for Groups of 7531, 7532, 7534 and 7536

**[Concerned products]**

Tables 1 and 2 show the concerned products.

**Table 1 Concerned products (1)**

Group	Concerned products		
3807 group	M38072M2-XXXFP M38078MC-XXXFP M38079SFP M38079EF-XXXFP M38079EFP	M38073M4-XXXFP M38079MF-XXXFP M38073E4-XXXFP M38079EFD-XXXFP M38073E4FS	M38077M8-XXXFP M38079MFD-XXXFP M38073E4FP M38079EFD-XXXFP M38079EFD-XXXFP M38079EFD-XXXFP M38079EFD-XXXFP
3850 group	M38503M2-XXXFP/SP M38503M2H-XXXFP/SP M38503M4A-XXXFP/SP M38503M4H-XXXFP/SP M38507M8-XXXFP/SP M38503E4FP/SP/SS M38504E6FP/SP/SS	M38503M2A-XXXFP/SP M38503M4-XXXFP/SP M38503M4D-XXXFP/SP M38504M6-XXXFP/SP M38503E4-XXXFP/SP M38504E6-XXXFP/SP M38507F8FP/SP	

**Table 2 Concerned products (2)**

Group	Concerned products		
3851 group	M38513M4-XXXFP/SP M38517M8-XXXFP/SP M38513E4FP/SP/SS M38514E6FP/SP/SS	M38514M6-XXXFP/SP M38513E4-XXXFP/SP M38514E6-XXXFP/SP M38517F8FP/SP	
3886 group	M38867M8A-XXXHP M38867E8AHP	M38867SAHP M38867E8AFS	M38867E8A-XXXHP
7515 group	M37515M4-XXXHP M37515E4FS	M37515E4-XXXHP	M37515E4HP
7516 group	M37516M4-XXXHP M37516M6H-XXXKP M37516E6HP/FS	M37516M4H-XXXKP M37516M8-XXXHP M37516F8HP	M37516M6-XXXHP M37516E6-XXXHP
7531 group	M37531M4-XXXFP/GP/SP M37531M4V-XXXGP M37531M8T-XXXFP/GP M37531E4T-XXXGP M37531E8FP/SP	M37531M4T-XXXFP/GP/SP M37531M8-XXXFP/GP/SP M37531E4FP/GP/SP M37531E4V-XXXGP	
7532 group	M37532M4-XXXFP/GP	M37532E8FP	
7534 group	M37534M4-XXXFP/GP/SP	M37534E4GP	M37534E8FP/SP
7536 group	M37536M4-XXXSP	M37536E8SP	