

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

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RenesasTechnology Corp.

Product Category	MPU&MCU		Document No.	TN-16C-A144A/E	Rev.	1.00
Title	R8C/18, 19, 1A, 1B Groups Precautions on High-Speed On-Chip Oscillator Accuracy during Auto-Program Oepration and Auto-Erase Operation.		Information Category	Technical Notification		
Applicable Product	R8C/18, 19, 1A, 1B Groups	Lot No.	Reference Document			
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The high-speed on-chip oscillator frequency may change up to  $\pm 10\%$ <sup>(1)</sup> during auto-program operation or auto-erase operation in Flash memory CPU rewrite mode.  
The high-speed on-chip oscillator frequency after auto-programming ends or auto-erasing ends is held the state before the program command or block erase command is generated. Also, This precaution is not applicable when the read array command, read status register command or clear status register command is generated.  
The application products must be designed with careful considerations for the frequency change.

NOTES:

1. Change ratio to 8MHz frequency adjusted in shipping.

**Table 1 High-Speed On-Chip Oscillator Circuit Electrical Characteristics**

Parameter	Condition	Standard			Unit
		Min.	Typ.	Max.	
High-Speed On-Chip Oscillator Frequency When the Reset is Deasserted	V <sub>cc</sub> =5.0V, T <sub>opr</sub> =25°C	–	8	–	MHz
High-Speed On-Chip Oscillator Frequency Temperature Dependence	0 to + 60°C/5V $\pm$ 5%	7.76	–	8.24	MHz
	-20 to + 85°C/2.7 to 5.5V	7.68	–	8.32	MHz
	-40 to 85°C/2.7 to 5.5V	7.44	–	8.32	MHz

NOTES:

1. Refer to the hardware manual for details.

**Table 2 High-Speed On-Chip Oscillator Circuit Electrical Characteristics during Auto-Programming or Auto-Erasing**

Parameter	Condition	Standard			Unit
		Min	Typ.	Max.	
High-Speed On-Chip Oscillator Frequency Temperature and Voltage Dependence	-40 to + 85°C/2.7 to 5.5V	7.44	–	8.80	MHz