

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

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

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HITACHI SEMICONDUCTOR TECHNICAL UPDATE

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|------------------------------|--|-------------------------------|---|---|----------------|-----------------------------|
| Classification of Production | Development environment | | | No | TN- EML-091A/E | |
| THEME | Limitation on Using the H8S/2678, 2678R, 2668, 2368 and 2378 series E6000 Emulator | Classification of Information | 1. Spec change 2. Supplement of Documents ③ Limitation of Use | 4. Change of Mask 5. Change of Production Line | | |
| PRODUCT NAME | HS2678EPI61H or HS2678REPI61H | Lot No. All lots | Reference Documents | H8S Series E6000 Emulator ADE-702-194B | Rev. 1.0 | Effective Date Permanent |

In the H8S/2678, 2678R, 2668, 2368 and 2378 series E6000 emulator, there is the following limitation.

1. Limitation

Take care when using the emulator because one cycle of trace mnemonics is not displayed immediately before the refresh cycle, when DRAM or SDRAM is used in the external area and the following conditions are satisfied:

- (1) The external access at CBR refresh is disabled when using the DRAM and refreshing CBR (CBRM bit in REFCR = 1), and the cycle immediately before the refresh cycle accesses the external area.
- (2) The cycle immediately before the refresh cycle accesses the external area at SDRAM automatic refresh.

This phenomenon does not occur when the emulator SIMM memory is used even if the cycle immediately before the refresh cycle accesses the external area.

2. Countermeasure

When DRAM is used, enable the external access at CBR refresh (CBRM bit in REFCR = 0).