

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>

April 1st, 2010
Renesas Electronics Corporation

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

Send any inquiries to <http://www.renesas.com/inquiry>.

RENESAS TECHNICAL UPDATE

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Renesas Technology Corp.

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|--------------------|---|-----------------------------|----------------------|---|------|-----|
| Product Category | User Development Environment | | Document No. | TN-EML- A130A/E | Rev. | 1.0 |
| Title | Leakage current from the E10A emulator | | Information Category | Technical Notification | | |
| Applicable Product | All products of the SuperH™ family E10A emulator; see page 2 for details on the type numbers of the applicable products | Lot No. | Reference Document | SuperH™ Family E10A Emulator User's Manual Specific guide for the E10A emulator For details, refer to page 3. | | |
| | | See the applicable products | | | | |

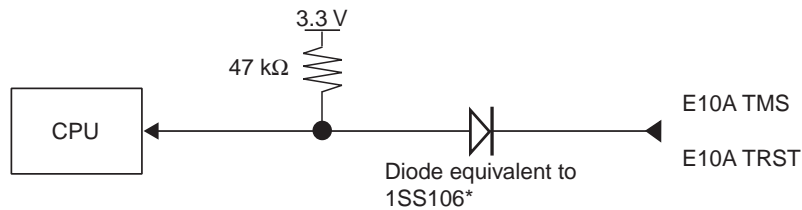
When the emulator is inserted into the host computer and the power supply is turned on, and the user system is connected to the E10A emulator (the power supply of the user system is turned off), the power-supply voltage of the user system may become higher around 1.2 V to 1.4 V than the normal voltage due to the leakage current from the E10A emulator.

This is because TMS and TRST are driven to high by the E10A emulator; the leakage current occurs from a TMS line before starting HDI or HEW (emulator software), and from TMS and TRST lines through the microcomputer after starting the emulator software. This phenomenon only occurs in the SuperH™ family E10A emulator, not in the H8S, H8SX family.

Although the microcomputer will not be degraded or damaged, a power-on reset may be disabled.

The power-supply voltage raised by the leakage current can be reduced to 0.2 V by inserting a diode in the output pins (TMS and TRST) of the E10A emulator. For the type (type number) and the inserting direction of the diode, see the figure below.

The result differs depending on the circuit and can only be used as a reference.



Note: Schottky-switching diode manufactured by Renesas

Details on the Type Numbers of the Applicable Products:

SH-2

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|--------------|--------------|--------------|--------------|
| HS7612KCM01H | HS7612KCI01H | | |
| HS7615KCM01H | HS7615KCI01H | | |
| HS7616KCM01H | HS7616KCI01H | | |
| HS7047KCM01H | HS7047KCM02H | HS7047KCI01H | HS7047KCI02H |
| HS7144KCM01H | HS7144KCM02H | HS7144KCI01H | HS7144KCI02H |
| HS7618KCM01H | HS7618KCI01H | | |
| HS0760KCM01H | HS0760KCM02H | HS0760KCI01H | HS0760KCI02H |

SH-3

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|---------------|---------------|----------------|---------------|
| HS7729KCM01H | HS7729KCM02H | HS7729KCI01H | HS7729KCI02H |
| HS7729RKCM01H | HS7729RKCM02H | HS7729RKC0101H | HS7729RKCI02H |
| HS7727KCM01H | HS7727KCM02H | HS7727KCI01H | HS7727KCI02H |
| HS7706KCM01H | HS7706KCM02H | HS7706KCI01H | HS7706KCI02H |
| HS7705KCM01H | HS7705KCM02H | HS7705KCI01H | HS7705KCI02H |
| HS7630KCM01H | HS7630KCM02H | HS7630KCI01H | HS7630KCI02H |
| HS7660KCM01H | HS7660KCM02H | HS7660KCI01H | HS7660KCI02H |
| HS7641KCM01H | HS7641KCM02H | HS7641KCI01H | HS7641KCI02H |
| HS7710KCM01H | HS7710KCM02H | HS7710KCI01H | HS7710KCI02H |
| HS7622KCM01H | HS7622KCM02H | HS7622KCI01H | HS7622KCI02H |

SH-4

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|---------------|----------------|----------------|---------------|
| HS7750KCM01H | HS7750KCI01H | | |
| HS7750RKCM01H | HS7750RKC0101H | | |
| HS7751KCM01H | HS7751KCM02H | HS7751KCI01H | HS7751KCI02H |
| HS7751RKCM01H | HS7751RKCM02H | HS7751RKC0101H | HS7751RKCI02H |
| HS7760KCM01H | HS7760KCM02H | HS7760KCI01H | HS7760KCI02H |
| HS0775KCM01H | HS0775KCM02H | HS0775KCI01H | HS0775KCI02H |

SH-Mobile

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|--------------|--------------|--------------|--------------|
| HS7290KCM01H | HS7290KCM02H | HS7290KCI01H | HS7290KCI02H |
| HS7294KCM01H | HS7294KCM02H | HS7294KCI01H | HS7294KCI02H |
| HS7300KCM01H | HS7300KCM02H | HS7300KCI01H | HS7300KCI02H |

Details on the SuperH™ Family E10A Emulator User's Manual and Specific Guide for the E10A Emulator:

SH-2

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| SH7612 E10A Emulator User's Manual: | HS7612KCM01HE(B) Rev.2.0 |
| Specific Guide for the SH7615 E10A Emulator: | REJ10B0132-0100H Rev.1.00 |
| Specific Guide for the SH7616 E10A Emulator: | REJ10B0134-0100H Rev.1.00 |
| SH7047 E10A Emulator User's Manual: | ADE-702-275A Rev.2.0 |
| SH7144 E10A Emulator User's Manual: | ADE-702-347 Rev.1.0 |
| Specific Guide for the SH7618 E10A Emulator: | REJ10B0077-0100H Rev.1.00 |
| SH2-DSP ASIC E10A Emulator User's Manual: | ADE-702-293 Rev.1.0 |

SH-3

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| Specific Guide for the SH7729 E10A Emulator: | REJ10B0066-0100H Rev.1.00 |
| Specific Guide for the SH7729R E10A Emulator: | REJ10B0067-0100H Rev.1.00 |
| Specific Guide for the SH7727 E10A Emulator: | REJ10B0065-0100H Rev.1.00 |
| Specific Guide for the SH7706 E10A Emulator: | REJ10B0064-0100H Rev.1.00 |
| Specific Guide for the SH7705 E10A Emulator: | REJ10B0072-0100H Rev.1.00 |
| Specific Guide for the SH7630 E10A Emulator: | REJ10B0015-0100H Rev.1.00 |
| Specific Guide for the SH7660 E10A Emulator: | REJ10B0001-0100H Rev.1.00 |
| Specific Guide for the SH7641 E10A Emulator: | REJ10B0010-0100H Rev.1.00 |
| SH7710 E10A Emulator User's Manual: | ADE-702-370 Rev.1.0 |
| Specific Guide for the SH7622 E10A Emulator: | REJ10B0063-0100H Rev.1.00 |

SH-4

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| Specific Guide for the SH7750 E10A Emulator: | REJ10B0110-0100H Rev.1.00 |
| Specific Guide for the SH7750R E10A Emulator: | REJ10B0079-0100H Rev.1.00 |
| Specific Guide for the SH7751 E10A Emulator: | REJ10B0080-0100H Rev.1.00 |
| Specific Guide for the SH7751R E10A Emulator: | REJ10B0081-0100H Rev.1.00 |
| Specific Guide for the SH7760 E10A Emulator: | REJ10B0082-0100H Rev.1.00 |
| Specific Guide for the SH4-R ASIC E10A Emulator: | REJ10B0078-0100H Rev.1.00 |

SH-Mobile

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| Specific Guide for the SH7290 E10A Emulator: | REJ10B0012-0100H Rev.1.00 |
| Specific Guide for the SH7294 E10A Emulator: | REJ10B0013-0100H Rev.1.00 |
| Specific Guide for the SH7300 E10A Emulator: | REJ10B0014-0100H Rev.1.00 |