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# HITACHI SEMICONDUCTOR TECHNICAL UPDATE

| DATE | 5 July 2001 | No. | TN- EML-068 A/E |
|---|---|---|---|
| THEME | Warnings on Usage of the E6000 Emulator for H8/3664 Series and H8/3672 Series Products | | |

| CLASSIFICATION | ☐ Spec. change          ☑ Limitation on Use <br> ☐ Supplement of Documents | | |
|---|---|---|---|

| PRODUCT NAME | H8/3664 Series, H8/3672 Series E6000 Emulator      Type number: HS3664EPI61H | | |
|---|---|---|---|

| REFERENCE DOCUMENTS | ·HS3664EPI61H Supplementary Information | Effective   All lot |
|---|---|---|
| | | From |

When programming the H8/3664 series, H8/3672 series microcomputer using the E6000 emulator (HS3664EPI61H), refer to the attached Warnings on Usage of the E6000 Emulator for H8/3664 Series and H8/3672 Series Products before setting registers.

# Warnings on Usage of the E6000 Emulator for H8/3664 Series and H8/3672 Series Products

The following warnings apply to register settings when programming the H8/3664 Series and H8/3672 Series microcomputers using the E6000 emulator.

1. Warnings that Apply to H8/3664 Series Programming

   (1) The description given in the hardware manual is "Initial value: 1. Reserved. These bits are always read as 1". However, the description in the E6000 manual is "Always specify 0. These bits are always read as the specified values".

   | Target Address | Register Name | Bits |
   |---|---|---|
   | H'FFE0 | Port mode register 1 | Bits 3 and 2 |

   (2) The description given in the hardware manual is "Initial value: 0. Reserved. These bits are always read as 0". However, the description in the E6000 manual is "Always specify 0. These bits are always read as the specified values".

   | Target Addresses | Register Name | Bits |
   |---|---|---|
   | H'FFE1 | Port mode register 5 | Bits 7 and 6 |
   | H'FFF9 | Module standby control register 1 | Bit 7 |

   (3) The description given in the hardware manual is "Reserved". However, the description in the E6000 manual is "Always specify 0. These bits are always read as the specified values".

   | Target Addresses | Register Name | Bits |
   |---|---|---|
   | H'FFE2 | Port mode register 3 | Bits 7 to 3 |
   | H'FFF5 | Interrupt enable register 2 | Bits 7 to 5 |
   | H'FFFA | Module standby control register 2 | Bits 7 to 0 |
   | H'FFFB | Module standby control register 3 | Bit 0 |

   (4) The hardware manual shows registers at the addresses given below. For these locations, however, the applicable description in the E6000 manual is "Writing has no effect. These bits are always read as undefined values", because there are no registers at these locations of the E6000.

   | Target Addresses | Register Name | Bits |
   |---|---|---|
   | H'FF90 | Flash memory control register 1 | Bits 7 to 0 |
   | H'FF91 | Flash memory control register 2 | Bits 7 to 0 |
   | H'FF92 | Flash memory power control register | Bits 7 to 0 |
   | H'FF93 | Erase block register 1 | Bits 7 to 0 |
   | H'FF9B | Flash memory enable register | Bits 7 to 0 |

2. Warnings that Apply to H8/3672 Series Programming

(1) The description given in the hardware manual is "Initial value: 1. Reserved. These bits are always read as 1". However, the description in the E6000 manual is "Always specify 0. These bits are always read as the specified values".

| Target Address | Register Name | Bits |
|---|---|---|
| H'FFE0 | Port mode register 1 | Bit 3 |

(2) The description given in the hardware manual is "Initial value: 0. Reserved. These bits are always read as 0". However, the description in the E6000 manual is "Always specify 0. These bits are always read as the specified values".

| Target Addresses | Register Name | Bits |
|---|---|---|
| H'FFE0 | Port mode register 1 | Bits 6 and 5 |
| H'FFF2 | Interrupt edge select register1 | Bits 7 , 2 and 1 |
| H'FFF4 | Interrupt enable register1 | Bits 6 , 2 and 1 |
| H'FFF9 | Module standby control register 1 | Bit 7 |

(3) The description given in the hardware manual is "Reserved". However, the description in the E6000 manual is "Always specify 0. These bits are always read as the specified values".

| Target Addresses | Register Name | Bits |
|---|---|---|
| H'FFE2 | Port mode register 3 | Bits 7 to 3 |
| H'FFF5 | Interrupt enable register 2 | Bits 7 to 5 |
| H'FFFA | Module standby control register 2 | Bits 7 to 0 |
| H'FFFB | Module standby control register 3 | Bit 0 |

(4) The hardware manual shows registers at the addresses given below. For these locations, however, the applicable description in the E6000 manual is "Writing has no effect. These bits are always read as undefined values", because there are no registers at these locations of the E6000.

| Target Addresses | Register Name | Bits |
|---|---|---|
| H'FF90 | Flash memory control register 1 | Bits 7 to 0 |
| H'FF91 | Flash memory control register 2 | Bits 7 to 0 |
| H'FF92 | Flash memory power control register | Bits 7 to 0 |
| H'FF93 | Erase block register 1 | Bits 7 to 0 |
| H'FF9B | Flash memory enable register | Bits 7 to 0 |

Table 1  Differences between the Evaluation Chip and the H8/3664, H8/3672 Series Products

**H8/3660 (Evaluation chip)**

| Address | Register | Bit 7 | Bit 6 | Bit 5 | Bit 4 | Bit 3 | Bit 2 | Bit 1 | Bit 0 |
|---|---|---|---|---|---|---|---|---|---|
| H'FFE0 | PMR1 | IRQ3 | IRQ2 | IRQ1 | IRQ0 | TXD2 | PWM | TXD | TMOW |
| H'FFE1 | PMR5 | POF57 | POF56 | WKP5 | WKP4 | WKP3 | WKP2 | WKP1 | WKP0 |
| H'FFE2 | PMR3 | POF27 | POF26 | POF25 | POF24 | POF23 | — | — | — |
| H'FFF1 | SYSCR2 | SMSEL | LSON | DTON | MA2 | MA1 | MA0 | SA1 | SA0 |
| H'FFF2 | IEGR1 | NMIEG | — | — | — | IEG3 | IEG2 | IEG1 | IEG0 |
| H'FFF4 | IENR1 | IENDT | IENTA | IENWP | — | IEN3 | IEN2 | IEN1 | IEN0 |
| H'FFF5 | IENR2 | IENTB3 | IENTB2 | IENTB1 | — | — | — | — | — |
| H'FFF9 | MSTCR1 | MSTS4 | MSTIIC | MSTS3 | MSTAD | MSTWD | MSTTW | MSTTV | MSTTA |
| H'FFFA | MSTCR2 | MSTS3_2 | MSTTB3 | MSTTB2 | MSTTB1 | MSTTX | — | MSTTZ0 | MSTPWM |
| H'FFFB | MSTCR3 | — | — | — | — | — | — | — | MSTS4_2 |

**H8/3664**

| Address | Register | Bit 7 | Bit 6 | Bit 5 | Bit 4 | Bit 3 | Bit 2 | Bit 1 | Bit 0 |
|---|---|---|---|---|---|---|---|---|---|
| H'FFE0 | PMR1 | IRQ3 | IRQ2 | IRQ1 | IRQ0 | — | — | TXD | TMOW |
| H'FFE1 | PMR5 | — | — | WKP5 | WKP4 | WKP3 | WKP2 | WKP1 | WKP0 |
| H'FFE2 | — | — | — | — | — | — | — | — | — |
| H'FFF1 | SYSCR2 | SMSEL | LSON | DTON | MA2 | MA1 | MA0 | SA1 | SA0 |
| H'FFF2 | IEGR1 | NMIEG | — | — | — | IEG3 | IEG2 | IEG1 | IEG0 |
| H'FFF4 | IENR1 | IENDT | IENTA | IENWP | — | IEN3 | IEN2 | IEN1 | IEN0 |
| H'FFF5 | — | — | — | — | — | — | — | — | — |
| H'FFF9 | MSTCR1 | — | MSTIIC | MSTS3 | MSTAD | MSTWD | MSTTW | MSTTV | MSTTA |
| H'FFFA | — | — | — | — | — | — | — | — | — |
| H'FFFB | — | — | — | — | — | — | — | — | — |

**H8/3672**

| Address | Register | Bit 7 | Bit 6 | Bit 5 | Bit 4 | Bit 3 | Bit 2 | Bit 1 | Bit 0 |
|---|---|---|---|---|---|---|---|---|---|
| H'FFE0 | PMR1 | IRQ3 | — | — | IRQ0 | — | (PWM) | TXD | TMOW |
| H'FFE1 | PMR5 | POF57 | POF56 | WKP5 | WKP4 | WKP3 | WKP2 | WKP1 | WKP0 |
| H'FFE2 | — | — | — | — | — | — | — | — | — |
| H'FFF1 | SYSCR2 | SMSEL | LSON | DTON | MA2 | MA1 | MA0 | SA1 | SA0 |
| H'FFF2 | IEGR1 | — | — | — | — | IEG3 | IEG2 | IEG1 | IEG0 |
| H'FFF4 | IENR1 | IENDT | — | IENWP | — | IEN3 | — | — | IEN0 |
| H'FFF5 | — | — | — | — | — | — | — | — | — |
| H'FFF9 | MSTCR1 | — | MSTIIC | MSTS3 | MSTAD | MSTWD | MSTTW | MSTTV | MSTTA |
| H'FFFA | — | — | — | — | — | — | — | — | (MSTPWM) |
| H'FFFB | — | — | — | — | — | — | — | — | — |