

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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MESC TECHNICAL NEWS

No. M16C-59-0008

M16C/80 Group Precautions for Using HOLD Signal

1. Affected devices

- M16C/80 Group

2. Precautions

When P40 to P47 and P50 to P52 are set to output port (the direction register is "1") in single-chip mode, then the MCU is changed to microprocessor mode or memory expansion mode. Although the $\overline{\text{HOLD}}$ pin may be held "L", P40 to P47 (A16 to A23, $\overline{\text{CS0}}$ to $\overline{\text{CS3}}$, MA8 to MA12) and P50 to P52 ($\overline{\text{RD}}/\overline{\text{WR}}/\overline{\text{BHE}}$, $\overline{\text{RD}}/\overline{\text{WRL}}/\overline{\text{WRH}}$, $\overline{\text{CASL}}/\overline{\text{CASH}}/\overline{\text{DW}}$) will not become high-impedance ports.

3. Countermeasure

When using the $\overline{\text{HOLD}}$ input while P40 to P47 and P50 to P52 are set as output ports in single-chip mode, you must first set all pins for P40 to P47 and P50 to P52 as input ports, then shift to microprocessor mode or memory expansion mode.

(There is no problem when the $\overline{\text{HOLD}}$ input is not used or when using P40 to P47 and P50 to P52 as input ports in single-chip mode.)

4. Remark

When the MCU starts up operation in single-chip mode, P40 to P47 and P50 to P52 start up as input ports after reset. When P40 to P47 and P50 to P52 have not been previously set to output, there is no need to set P40 to P47 and P50 to P52 to input before shifting to memory expansion mode.

When the MCU starts up operation in microprocessor mode, if shifting into single-chip mode is not desired, there is no problem. If shifting to single-chip mode is desired while P40 to P47 and P50 to P52 are set to input, there is no problem.

Changing of the direction registers for P40 to P47 and P50 to P52 is ignored in microprocessor mode and memory expansion mode. Rewrite of these direction registers of P40 to P47 and P50 to P52 is enabled only in single-chip mode.