

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.

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# MAEC TECHNICAL NEWS

No.M740-29-0204

## Note on Suspend current for 7532, 7534 and 7536 groups as Low-speed USB MCU.

**Classification**Corrections and supplementary  
explanation of document

✓ Notes

Knowhow

Others

**Concerned Products**M37532RSS, M37532E8FP, M37532M4-XXXFP/GP  
M37534RSS, M37534E8FP/SP, M37534E4GP,  
M37534M4-XXXFP/GP/SP, M37536RSS, M37536E8SP,  
M37536M4-XXXSP**[Affected application]**

The application that uses TTL level on P1<sub>0</sub>, P1<sub>2</sub>, P1<sub>3</sub> input level selection bit (bit 3 of address 17<sub>16</sub>) and USB function is affected.

**[Note]**

When USB suspend mode with TTL level on P1<sub>0</sub>, P1<sub>2</sub>, P1<sub>3</sub> input level selection bit (bit 3 of address 17<sub>16</sub> as shown in Fig. 1), suspend current as I<sub>CC</sub> might be greater than 300μA as a spec.

**[Countermeasure]**

There are two countermeasures by software to avoid it as follows.

- (1) Change from TTL input level to CMOS input level for P1<sub>0</sub>, P1<sub>2</sub>, P1<sub>3</sub> port input.
- (2) Change from TTL input level to CMOS input level before STP instruction in suspend routine; then after RESUME or Remote wake up interrupt, return to TTL input level from CMOS input level. That is shown in Fig.2.

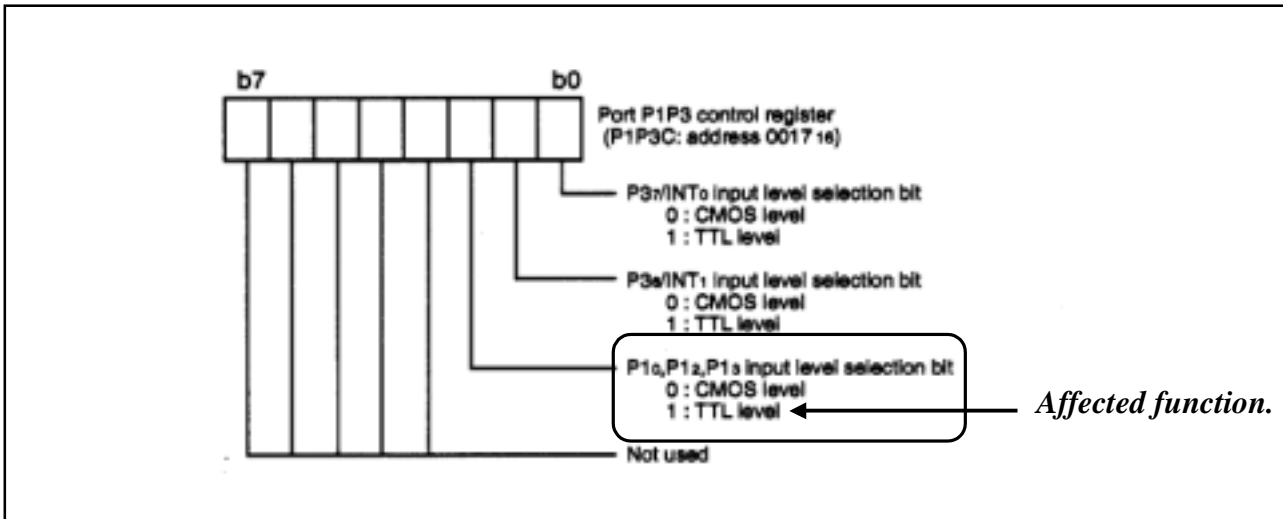


Fig.1. Affected function.

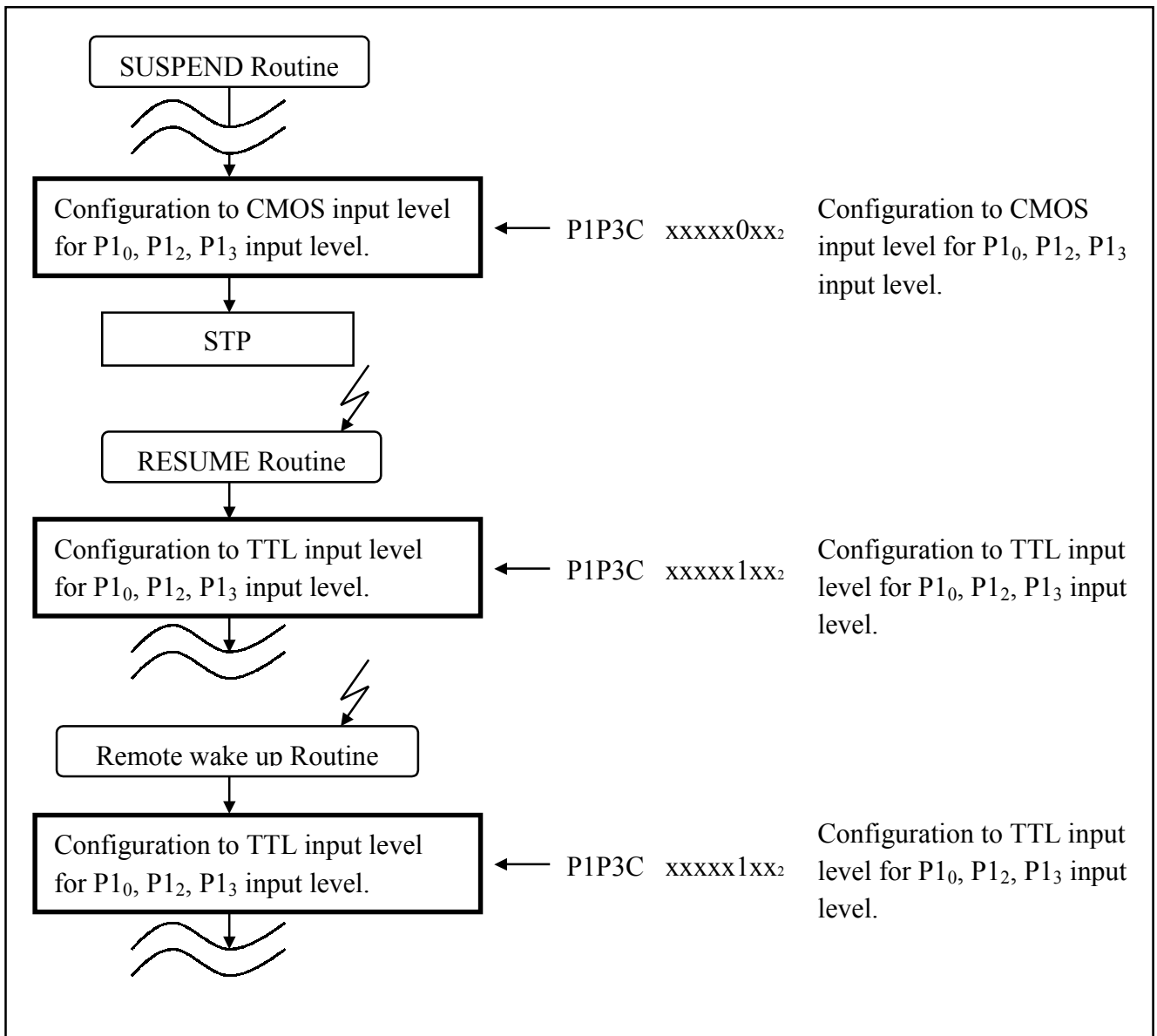


Fig.2. Countermeasure (2) by software.