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.

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April 1st, 2010
Renesas Electronics Corporation

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RENESAS TECHNICAL UPDATE

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Product Category	MPU&MCU		Document No.	TN-32R-A077A/E	Rev.	1.00
Title	Precautions for use of RBO (Return Bus Off) bit of the CANn control register in the M32R/ECU Series		Information Category	Technical Notification		
Applicable Product	32170/32174 Group, 32171Group, 32172/32173 Group, 32176 Group, 32180 Group, 32182 Group, 32185/32186 Group, 32192/32195/32196 Group	Lot No. -	Reference Document	Hardware Manual		

The following show precautions for use of RBO (Return Bus Off) bit of the CANn control register (CANnCNT).

Contents

RBO (Return Bus Off) bit is an extended function, designed for the purpose of transferring the CAN module quickly to the error active state without passing the sequence that the CAN protocol provided at a bus off state.
To set RBO bit to 1 (requires clearing the error counters), make sure that it is operated at a bus off state (when BOS bit of CANn status register = 1).

Notes. • Typically, after the CAN module is shifted to the bus off state, 11 consecutive recessive bits are detected 128 times, and then the CAN module is transferred to the error active state.
• Make sure that BOS bit = 1 (Bus Off State) before setting RBO bit to 1 within the 11 bits period (at the 500kbpps and within 22 μs). After 11 bits, the CAN module may be returned to the bus off state and become ready to communicate.
• There is no problem in setting the RBO bit when the CAN module is in the reset state.

Operations inapplicable to the notes above

- When it is inapplicable to the notes above, the first frame may not be received properly. From the second frame, the receive operation is performed normally.

- When it is inapplicable to the notes above, the subsequent frames may not be transmitted properly. However, after transmit/receive error is happened or complete reception, the transmit operation is performed normally.

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