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Renesas Electronics Corporation

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M32C/84, 85, 86, 87, 88 Group

Protect Operation

1. Abstract

This document describes the protect operation.

2. Introduction

The application example described in this document is applied to the following MCUs and parameter(s):

MCUs: M32C/84 Group
 M32C/85 Group
 M32C/86 Group
 M32C/87 Group
 M32C/88 Group

This program can be used with other M16C Family MCUs which have the same special function registers (SFRs) as the above MCUs. Check the manual for any additions and modifications to functions. Careful evaluation is recommended before using this application note.

3. Application Description

The protect function protects important registers from being easily overwritten from a runaway program.

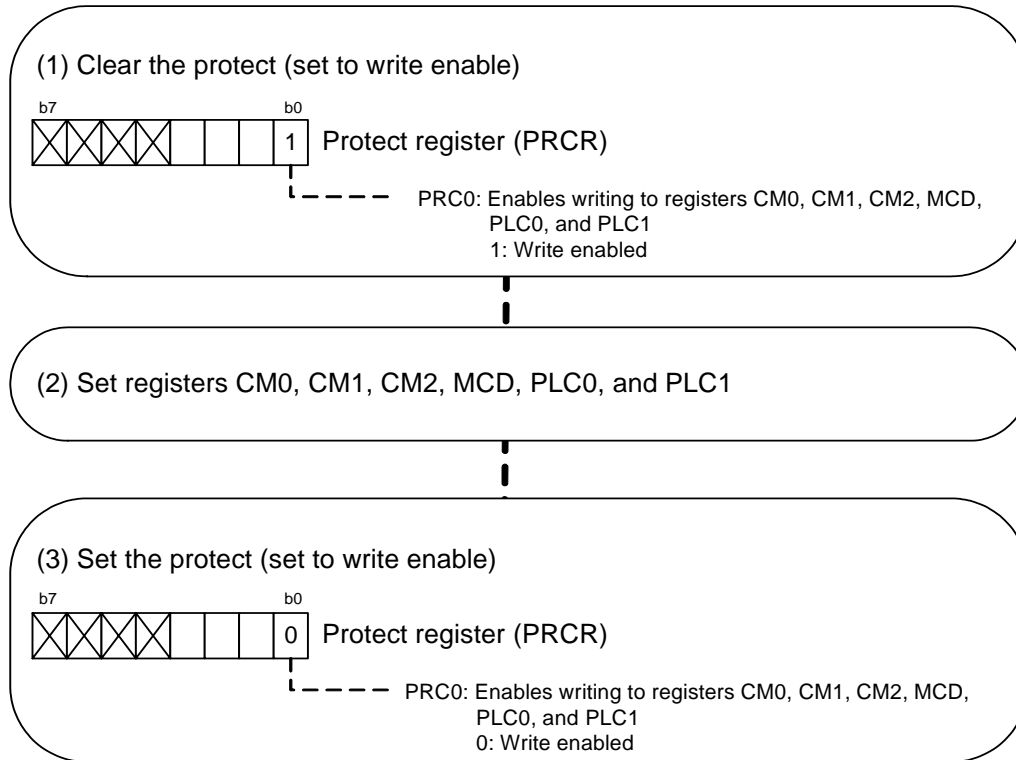
Each bit in the PRCR register protects the following registers:

- The PRC0 bit protects registers CM0, CM1, CM2, MCD, PLC0, and PLC1
- The PRC1 bit protects registers PM0, PM1, PM2, INVC0, and INVC1
- The PRC2 bit protects registers PD9 and PS3
- The PRC3 bit protects registers VCR2 and D4INT

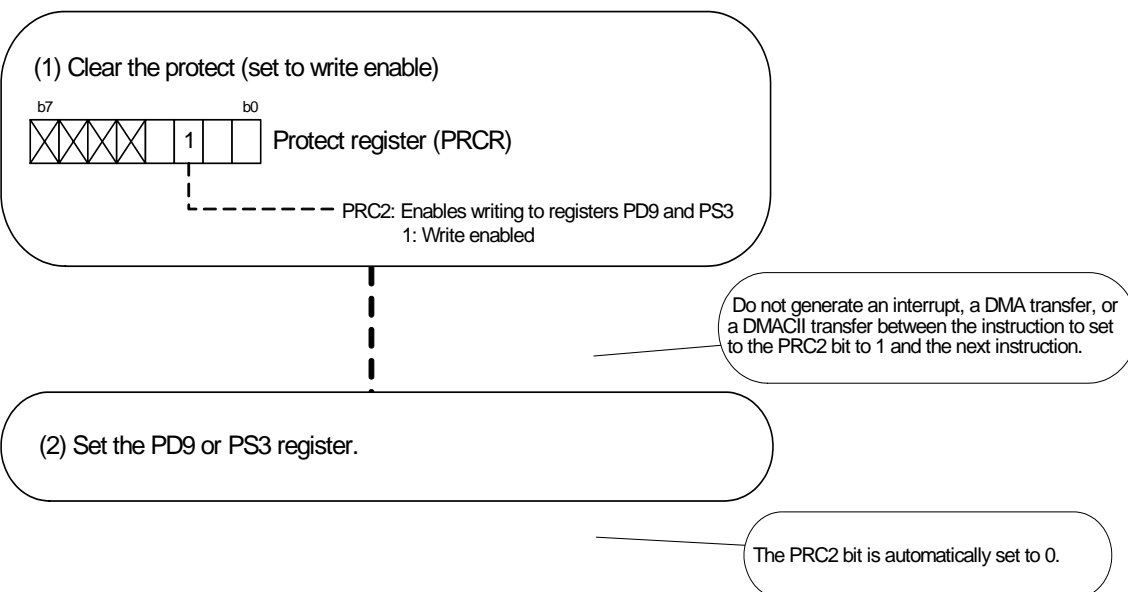
The PRC2 bit is set to 0 (write disabled) when data is written to a desired address after setting the PRC2 bit to 1 (write enabled). Set registers PD9 and PS3 immediately after setting the PRC2 bit in the PRCR register to 1 (write enabled). Do not generate an interrupt, a DMA transfer, or a DMACII transfer between the instruction to set to the PRC2 bit to 1 and the next instruction. Set bits PRC0, PRC1, and PRC3 by a program.

4. Setup

4.1 To Change Registers Protected by PRC0 Bit



4.2 To Change Registers Protected by PRC2 Bit



5. Sample Programming Code

A sample program can be downloaded from the Renesas Technology website.
For download, click “Application Notes” in the left-hand side menu of the M16C Family page.

6. Reference Documents

Hardware Manuals

M32C/84 Group Hardware Manual

M32C/85 Group Hardware Manual

M32C/86 Group Hardware Manual

M32C/87 Group Hardware Manual

M32C/88 Group Hardware Manual

The latest version can be downloaded from the Renesas Technology website.

Technical News/Technical Update

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REVISION HISTORY	M32C/84, 85, 86, 87, 88 Group Protect Operation
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Rev.	Date	Description	
		Page	Summary
1.00	Sep.10, 2006	-	First Edition issued

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