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瑞萨电子公司

【发行】瑞萨电子公司（<http://www.renesas.com>）

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M16C 单片机抗 EMC 的使用看门狗问题

Trouble

用户反映，M16C/62 单片机抗干扰能力弱

Analyze

检查程序，发现用户处理看门狗时钟源使用的是主时钟

Do

处理看门狗时钟源，不宜使用主时钟源，**最好使用计数源保护模式**

计数源保护模式是将内部振荡器时钟用作看门狗定时器计数源的模式。在程序失控时即使CPU 时钟停止，也能给看门狗定时器提供时钟。

在使用此模式时，必须进行以下寄存器设置：

- (1) 将PRCR寄存器的PRC1位置“1”（允许写PM1和PM2寄存器）
- (2) 将PM1寄存器的PM12位置“1”（在看门狗定时器下溢时复位）
- (3) 将PM2寄存器的PM22位置“1”（看门狗定时器的计数源为内部振荡器时钟）
- (4) 将PRCR寄存器的PRC1位置“0”（禁止写PM1和PM2寄存器）
- (5) 写WDTS寄存器(看门狗定时器开始计数)

如果将PM22 位置“1”，就变为以下状态：

- 内部振荡器开始振荡，内部振荡器时钟变为看门狗定时器的计数源
- 禁止写CM1寄存器的CM10位(即使写“1”也不变，不转移到停止模式)
- 在等待模式时，看门狗定时器不停止运行

MCU

文档适用于 Renesas M16C 内核的 MCU