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瑞萨电子公司

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7542 群

输出比较的应用

要点

本资料说明 7542 群的输出比较功能的设定方法，并且记载了应用例子。

动作确认器件

本资料说明的应用例子适合下列单片机：

- 单片机：7542 群

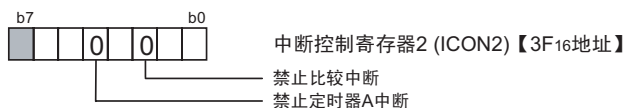
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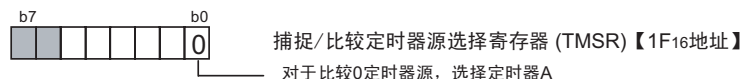
1. 设定方法

输出比较0的设定方法如图1～图3所示。在使用输出比较1～3时，也用同样的步骤设定。

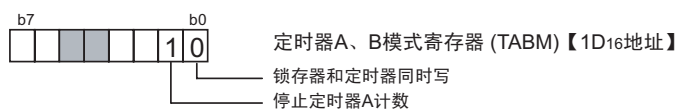
步骤1: 禁止定时器A中断和比较中断



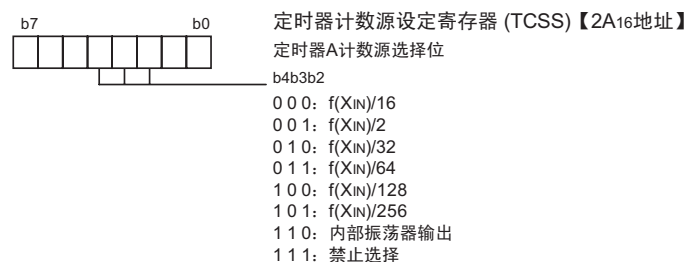
步骤2: 选择用于比较输出的定时器源



步骤3: 停止定时器A的计数, 将定时器A写控制位置“0” (锁存器和定时器同时写)

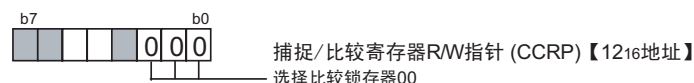


步骤4: 设定定时器A计数源



注. 必须选择f(X_{IN})/16或者f(X_{IN})/2。
在使用其它的计数源时, 必须在步骤9之后再次设定。

步骤5: 将比较寄存器R/W指针置“000”(选择比较锁存器00)



步骤6: 给比较锁存器00设定比较值

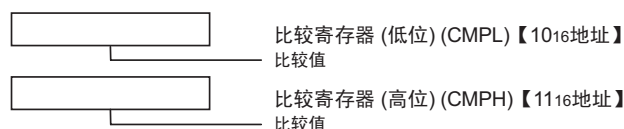
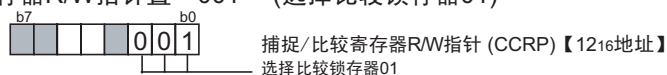
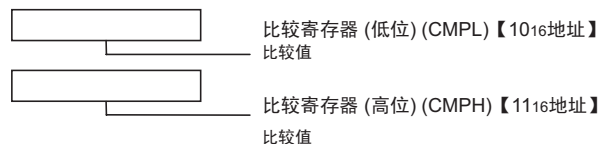


图 1 输出比较的设定方法 (1)

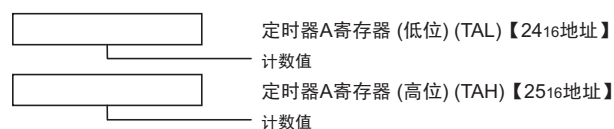
步骤7: 将比较寄存器R/W指针置“001” (选择比较锁存器01)



步骤8: 给比较锁存器01设定比较值

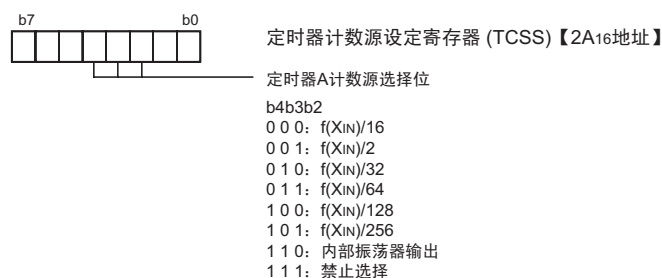


步骤9: 给定时器A设定计数值

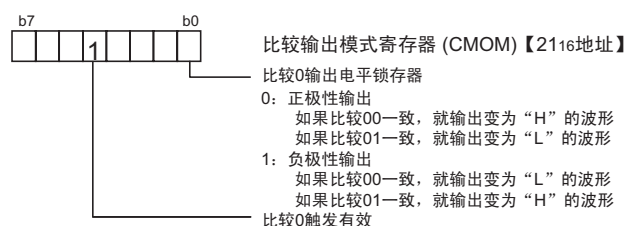


注: 必须以定时器A (低位)、定时器A (高位) 的顺序写。

步骤10: 作为定时器A计数源, 在使用 $f(X_{IN})/16$ 和 $f(X_{IN})/2$ 以外的计数源时, 再次设定定时器A计数源



步骤11: 设定比较输出模式寄存器



步骤12: 将比较0输出端口选择位置“1” (比较0输出端口)

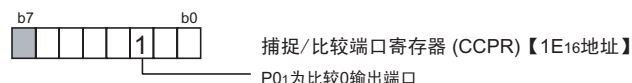
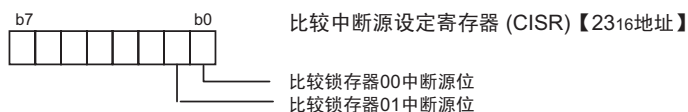
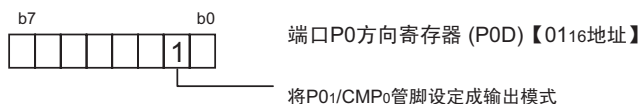


图 2 输出比较的设定方法 (2)

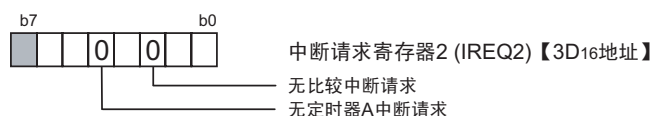
步骤13: 在使用比较中断时, 必须将比较锁存器00中断源位或者比较锁存器01中断源位设定成“1”(中断有效)



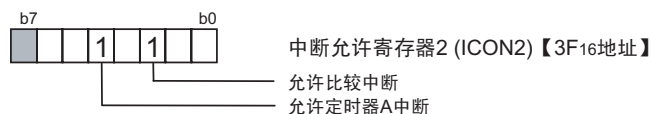
步骤14: 将比较0输出端口设定成输出模式



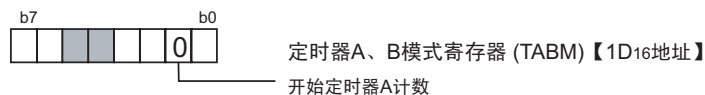
步骤15: 为了不执行不必要的中断处理, 必须对比较中断请求位和定时器A中断请求位置“0”(无请求)



步骤16: 在使用中断时, 必须将比较中断允许位和定时器A中断允许位置“1”(允许中断)



步骤17: 开始定时器A计数



各通道的比较输出电平可通过比较/捕捉状态寄存器的比较输出状态位确认。

在不停止输出而要改变输出波形的值时, 必须进行步骤7到步骤10的设定, 并且将比较设定值再装入寄存器 (CMPR) 的比较锁存器00、01再装入位置“1”(在下次下溢时再装入有效)。此时, 被写入比较寄存器的值在定时器A的下次下溢时将被传送到比较锁存器00、01, 并且改变输出波形。

图3 输出比较的设定方法 (3)

2. 参考文献

数据表

7542群数据表（最新版本请从瑞萨科技网页取得）

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修订记录

Rev.	发行日	修订内容	
		页	修订处
1.00	2004.09.15	—	初版发行

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