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2010年4月1日
瑞萨电子公司

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7544 群
定时器 X 运行（脉冲宽度测定模式）

要点
这是定时器 X 的脉冲宽度测定模式的应用例子。

动作确认器件
本资料说明的应用例子适合下列单片机和使用条件：

• 单片机：7544 群

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   1.2 控制步骤例子 ...................................................................................................2

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1. 应用例子的说明

■ 要点
对输入到P14/CNTR0管脚的脉冲的“H”电平宽度进行计数。

■ 说明
对输入到P14/CNTR0管脚的FG脉冲的“H”电平宽度进行计数。由定时器X中断检测下溢，由CNTR0中断检测输入脉冲的“H”电平的结束。
运行时钟使用f(XIN)=4.19MHz高速模式。

■ 例
当f(XIN)=4.19MHz时，以16分频后的3.8μs为计数源。在FFFF16～000016的范围内可测定到250ms。

1.1 定时器的连接和分频比的设定
定时器的连接和分频比的设定如图1所示。

<table>
<thead>
<tr>
<th>定时器X计数器选择位</th>
<th>定时器X中断请求位</th>
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<tbody>
<tr>
<td>1/16</td>
<td>0/1</td>
</tr>
<tr>
<td>1/256</td>
<td>0或者1</td>
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图1 定时器的连接和分频比的设定

250ms

0: 无中断请求
1: 有中断请求

1.2 控制步骤例子
控制步骤例子如图2所示。
定时器 X 运行（脉冲宽度测定模式）

图 2 控制步骤例子

1. 将端口 P1x (与 CNTR0 兼用) 设定为输入模式
2. 给 CNTR0x 中断允许位设定 “1” (允许 CNTR0 中断)
3. 给 CNTR0 中断允许位设定 “1” (允许 CNTR0 中断)
4. 给 CNTR0x 中断请求位设定 “0”
5. 给 CNTR0 中断请求位设定 “0”
6. 给 CNTR0x 中断允许位设定 “1” (允许 CNTR0 中断)
7. 给 CNTR0 中断允许位设定 “1” (允许 CNTR0 中断)
8. 给定时器 X 口设定值 [注2] 注1: 有关具体的时间，请向瑞萨电子公司查询。

注1: 有关具体的时间，请向瑞萨电子公司查询。
2. 250ms = 1/4.19MHz × 16 × (FF16 + 1) × (FF16 + 1)

定时器 X
预标度X
分频比
X
X
定时器 X
预标度X
X
X
X

图 2 控制步骤例子

1. 将端口 P1x (与 CNTR0 兼用) 设定为输入模式
2. 给 CNTR0x 中断允许位设定 “0” (禁止 CNTR0 中断)
3. 给 CNTR0x 中断允许位设定 “0” (禁止 CNTR0 中断)
4. 给定时器 X 口设定值 [注2] 注1: 有关具体的时间，请向瑞萨电子公司查询。
5. 给 CNTR0x 中断请求位设定 “0”
6. 给定时器 X 口设定值 [注2] 注1: 有关具体的时间，请向瑞萨电子公司查询。
7. 给 CNTR0 中断请求位设定 “0”
8. 给定时器 X 口设定值 [注2] 注1: 有关具体的时间，请向瑞萨电子公司查询。
9. 给 CNTR0x 中断请求位设定 “0”
10. 给 CNTR0x 中断请求位设定 “0”
11. 给 CNTR0 中断请求位设定 “0”
12. 给 CNTR0 中断请求位设定 “0”
13. 给 CNTR0 中断请求位设定 “0”
14. 给 CNTR0 中断请求位设定 “0”
15. 给 CNTR0 中断请求位设定 “0”
16. 给 CNTR0 中断请求位设定 “0”

图 2 控制步骤例子
2. 参考文献

数据表
7544群数据表（最新版本请从瑞萨科技网页取得）

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<td>2004.09.15</td>
<td>— 初版发行</td>
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Renesas

定时器 X 运行（脉冲宽度测定模式）

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