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PTM capture input 说明

在捕捉输入模式下，发生预设的外部输入信号变化时触发 比较器A或者P 中断，且计数器当前值被锁存到 CCRA寄存器，用户通过比较前后两次计数值的差值，可实现测量输入 信号脉冲宽度功能。

在捕捉输入模式下，TM 功能引脚的功能说明如下表。

引脚名称(n为TM 编号)	功能
PTCKn	输入引脚，外部时钟输入，可作为 PTM 的时钟源
PTPnI	输入引脚，输入捕捉输入源，触发信号可选上升沿，下降沿或双沿有效。
PTPn	输出引脚，无意义
PTPnB	输出引脚，无意义

example 说明

此范例演示了 PTM 的 capture input 模式的使用

程序说明

1. config sys clock

PTM clock 来自系统时钟，因此系统时钟一定要配置正确

2. config PTM to captur input mode

- 范例设置：时钟源为 $F_{sys}/4$, count = 1000

$$T = 1/(F_{sys}/4) * \text{count}$$

- 4M : $T = 1/(4/4) * \text{count} = 1000 \mu s$
- 8M : $T = 1/(8/4) * \text{count} = 500 \mu s$

- 范例设置：P中断count 最大位置为1000，超过则会发生P中断

3. config output pin

4. enable PTM

5. enable Interrupt : Non-required

根据需求设定

现象说明

- 使用信号发生器输出周期为5ms的方波。硬件连接到 PTP0I。
- 连接 e-link 和目标板，将程序下载到 MCU 并运行
- 全速运行后暂停程序，检测 countPeriod 值，8MHz 下约为10000，换算为时间即为 5000us。



