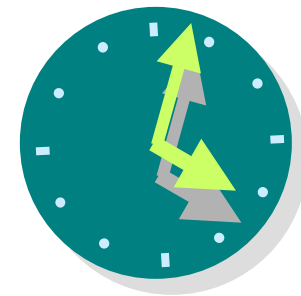


Timer Counters/ RTC



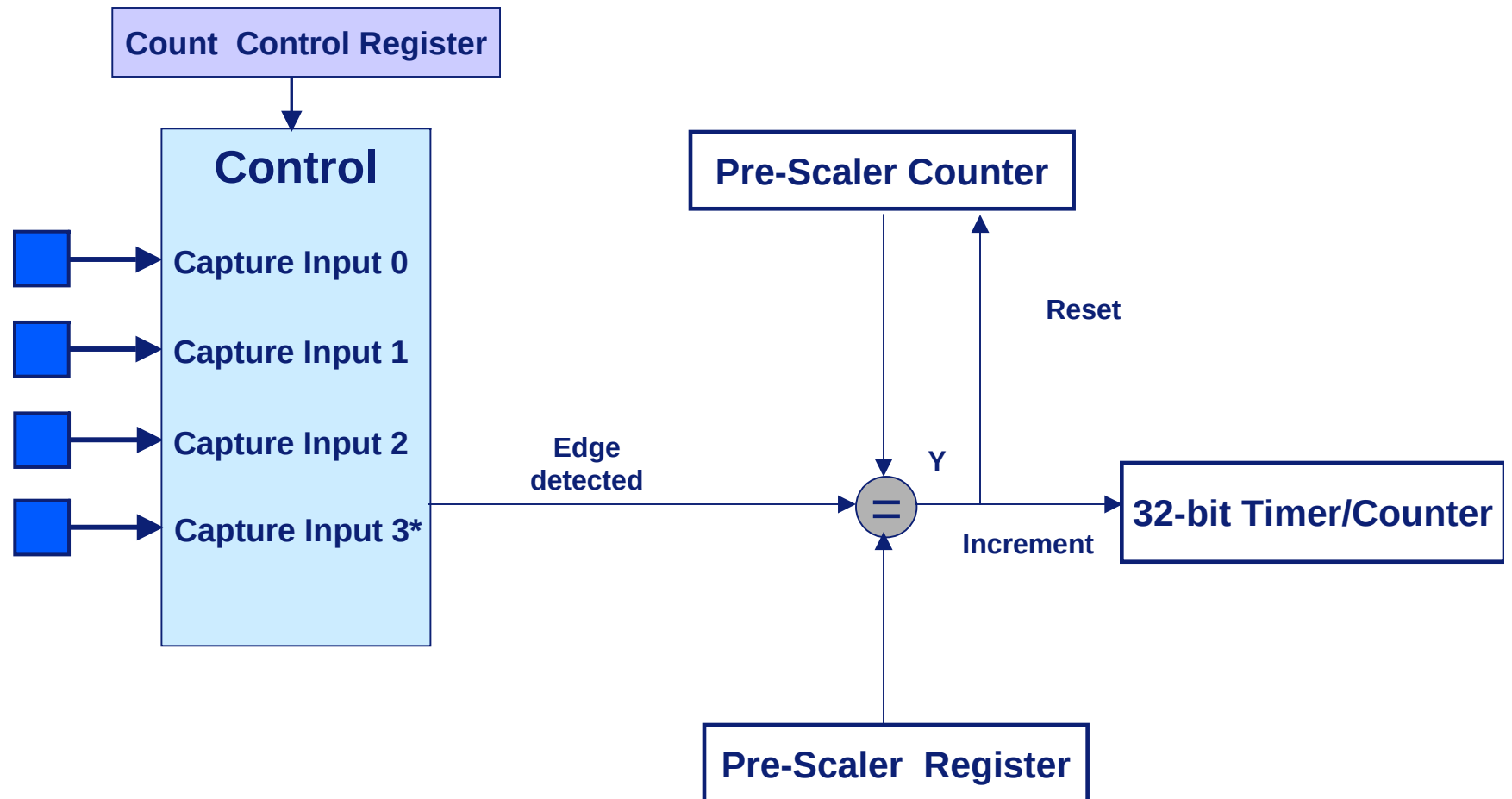
Timer 0 / Timer 1

- 32-bit Timer/Counters (counting upwards)
- Programmable 32-bit Prescaler
- Capture functionality for evaluating external signals
- Compare (=Match) functionality for generating external signals

Timer 0 / Timer 1 Counter Function

- If counter mode is selected then the selected Capture pin is sampled on rising edges of PCLK to determine rising and falling edges on the pin
- To ensure proper operation, both the minimum high and low time on the Capture signal should exceed cycle time of PCLK
- Can increment timer on rising, falling or change on edge level

Timer 0/1 Block Diagram (Counter)



Real Time Clock (RTC)

- Full Clock/Calendar function with alarms
- Dedicated 32-bit timer with 32-bit pre-scaler
- Generates its own 32.768 kHz reference clock from any crystal frequency
- Counts seconds, minutes, hours, day of month, month, year, day of week and day of year
- Can generate an interrupt or set an alarm flag for any combination of the counters

Real Time Clock (RTC)

- Can be clocked by a separate 32.768KHz or by prescaler divider based on VPB clock
- So RTC can run in Power Down mode
- Power consumption during Power Down mode from Vbat approx 20 μ A
- Has got its own supply pin Vbat which can be connected to battery or to the 3.3V supply

RTC Block Diagram

