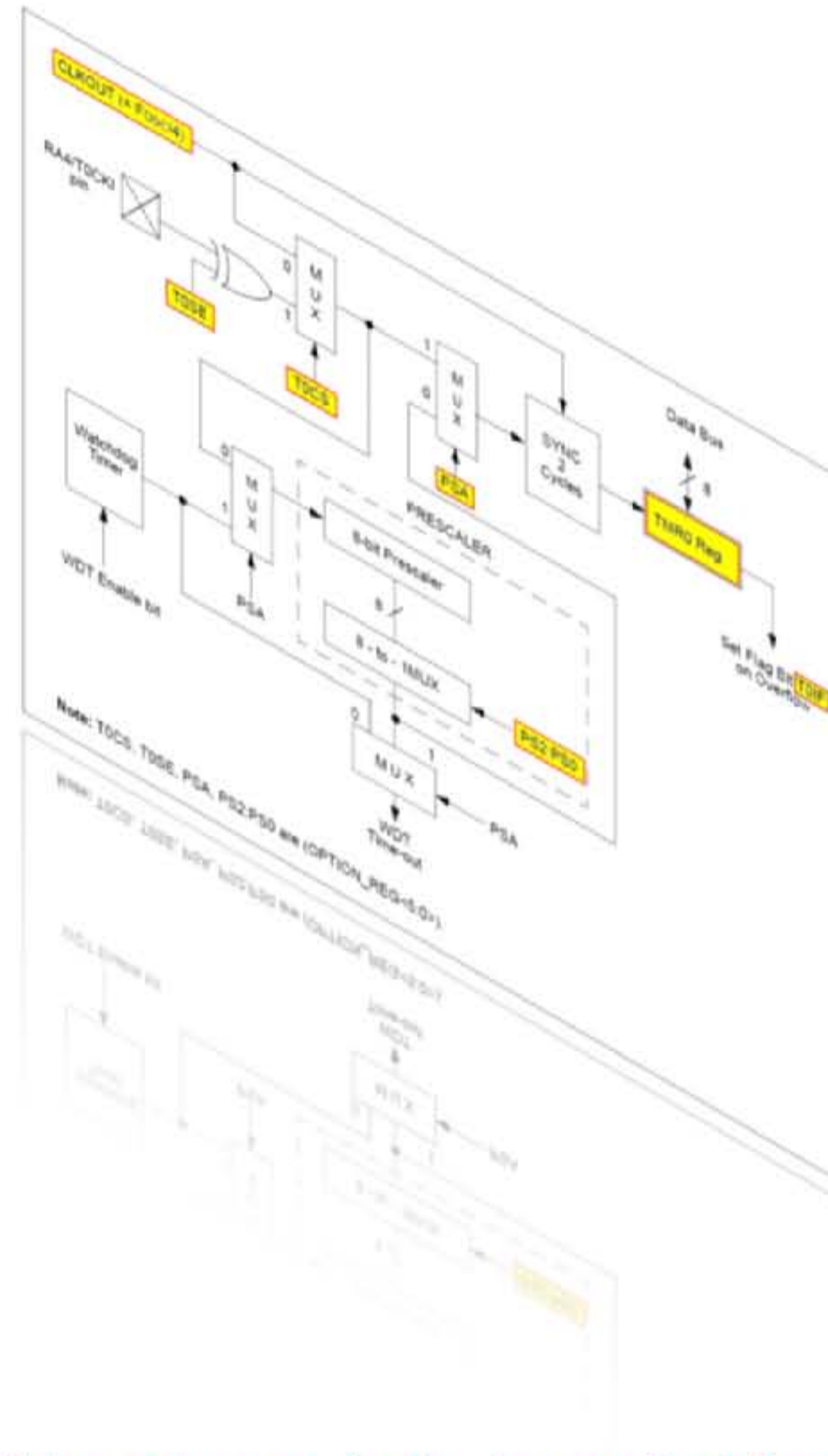


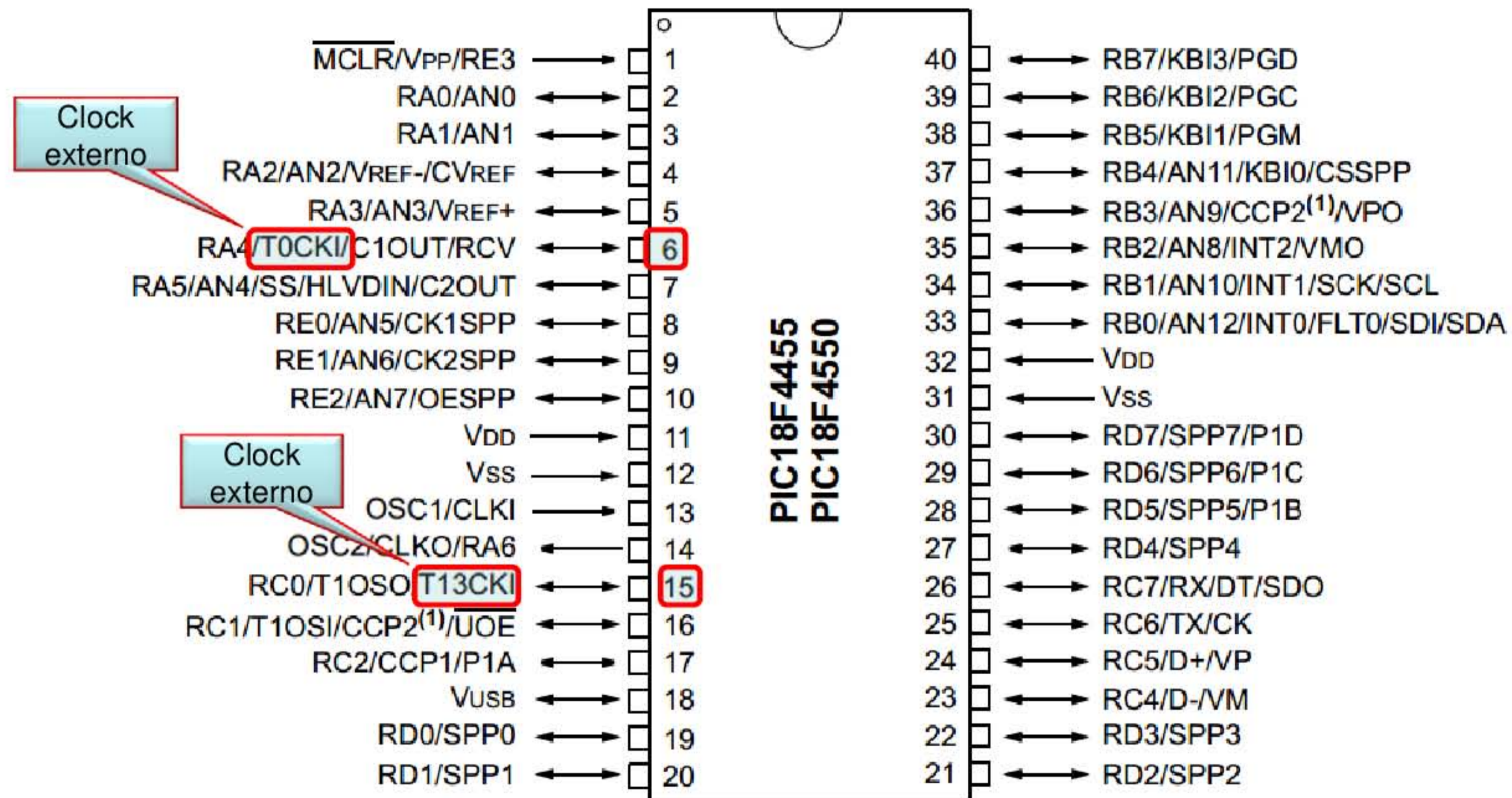
TIMER 0



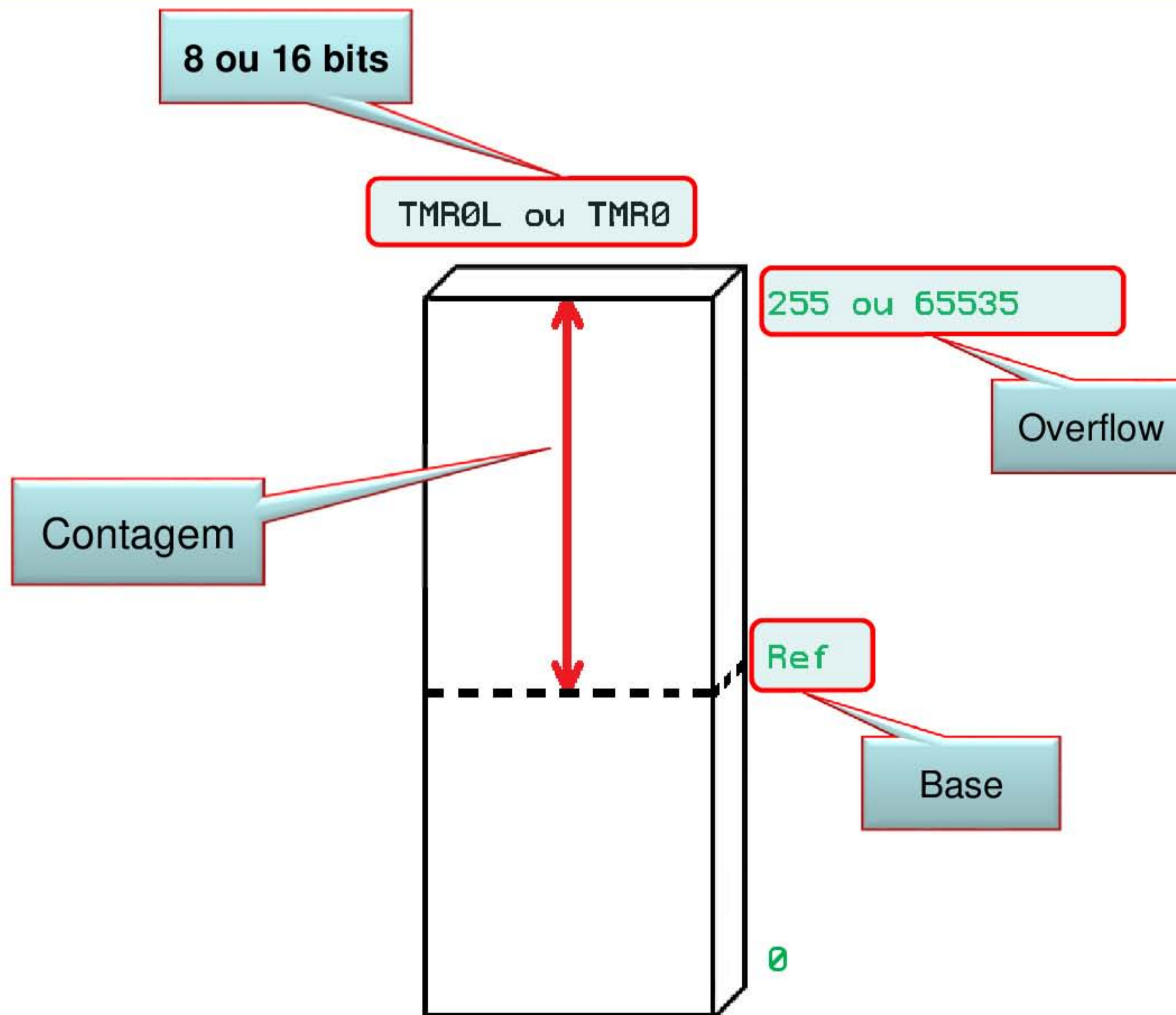
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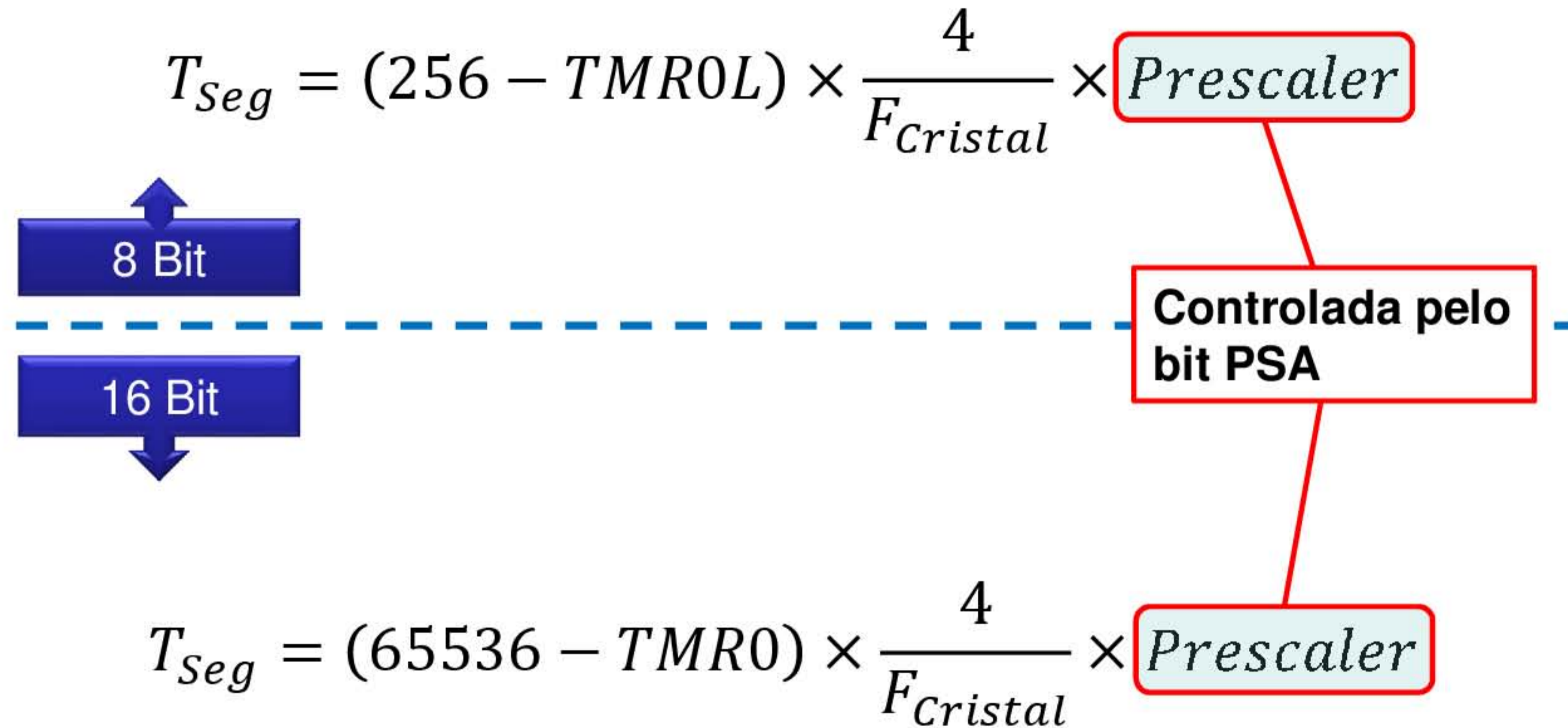
Características externas



O conceito

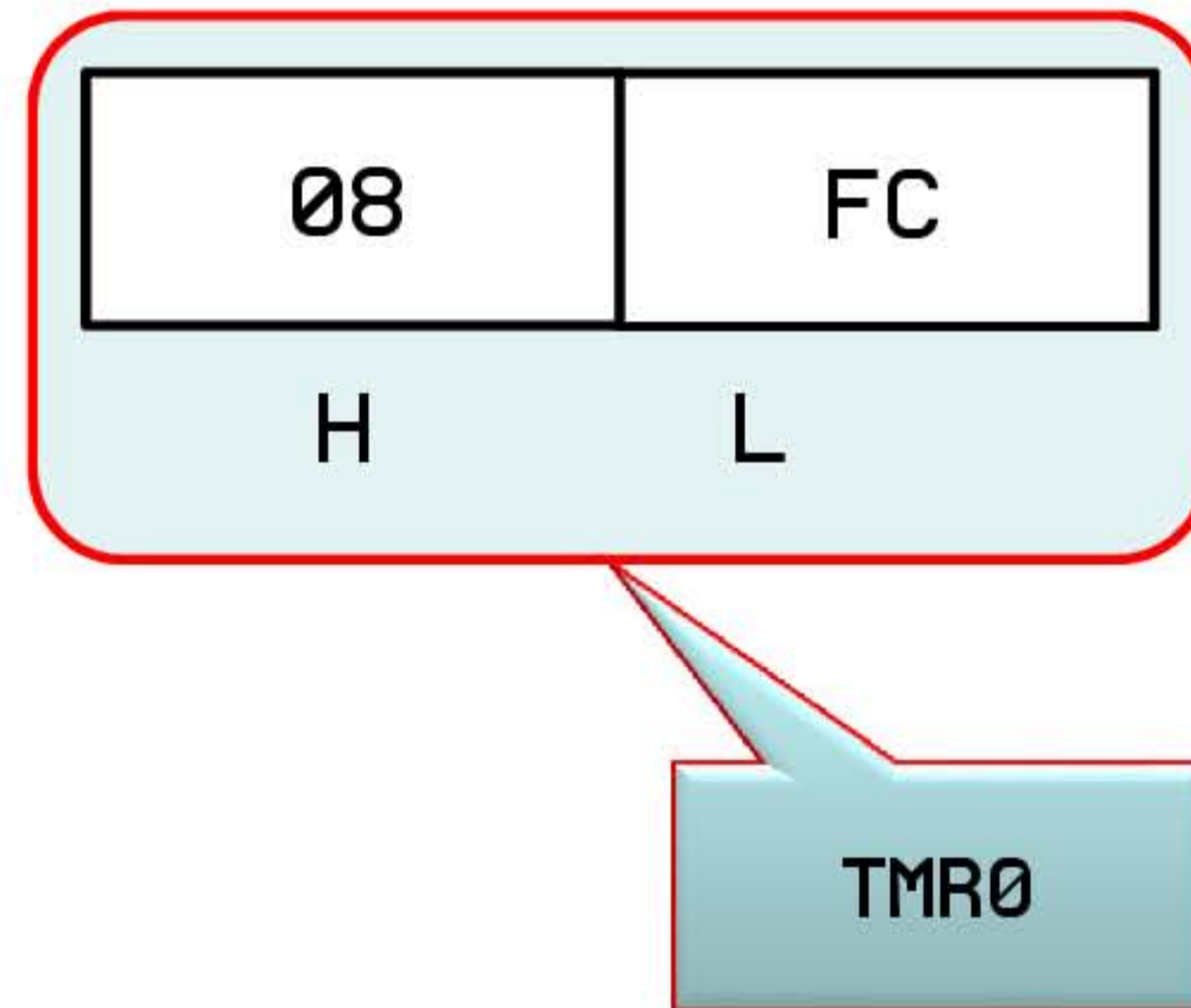


Cálculo de tempo



Preparando o TMR0

- Considerere carregar com 16 bits o valor de REF = $2300_{10} = 08FC$ ou $08 | FC$



T0CON: Timer0 Control Register

R/W-1	R/W-1	R/W-1	R/W-1	R/W-1	R/W-1	R/W-1	R/W-1
TMR0ON	T08BIT	T0CS	T0SE	PSA	T0PS2	T0PS1	T0PS0
7	6	5	4	3	2	1	0

TMR0ON Timer0 On/Off Control bit

1 = Enables Timer0

0 = Stops Timer0

T08BIT Timer0 8-Bit/16-Bit Control bit

1 = Timer0 is configured as an 8-bit timer/counter

0 = Timer0 is configured as a 16-bit timer/counter

T0CS Timer0 Clock Source Select bit

1 = Transition on T0CKI pin

0 = Internal instruction cycle clock (CLKO)

T0SE Timer0 Source Edge Select bit

1 = Increment on high-to-low transition on T0CKI pin

0 = Increment on low-to-high transition on T0CKI pin

PSA Timer0 Prescaler Assignment bit

1 = Timer0 prescaler is NOT assigned. Timer0 clock input bypasses prescaler.

0 = Timer0 prescaler is assigned. Timer0 clock input comes from prescaler output.

T0PS2 : T0PS0 Timer0 Prescaler Select bits

111 = 1:256 Prescale value

110 = 1:128 Prescale value

101 = 1:64 Prescale value

100 = 1:32 Prescale value

011 = 1:16 Prescale value

010 = 1:8 Prescale value

001 = 1:4 Prescale value

000 = 1:2 Prescale value

INTCON Interrupt Control Register

R/W-0	R/W-0	R/W-0	R/W-0	R/W-0	R/W-0	R/W-0	R/W-x
GIE/GIEH	PEIE/GIEL	TMR0IE	INT0IE	RBIE	TMR0IF	INT0IF	RBIF ⁽¹⁾
7	6	5	4	3	2	1	0

GIE/GIEH: Global Interrupt Enable bit

When IPEN = 0:

1 = Enables all unmasked interrupts

0 = Disables all interrupts

When IPEN = 1:

1 = Enables all high-priority interrupts

0 = Disables all interrupts

PEIE/GIEL: Peripheral Interrupt Enable bit

When IPEN = 0:

1 = Enables all unmasked peripheral interrupts

0 = Disables all peripheral interrupts

When IPEN = 1:

1 = Enables all low-priority peripheral interrupts (if GIE/GIEH = 1)

0 = Disables all low-priority peripheral interrupts

TMR0IE: TMR0 Overflow Interrupt Enable bit

1 = Enables the TMR0 overflow interrupt

0 = Disables the TMR0 overflow interrupt

INT0IE: INT0 External Interrupt Enable bit

1 = Enables the INT0 external interrupt

0 = Disables the INT0 external interrupt

RBIE: RB Port Change Interrupt Enable bit

1 = Enables the RB port change interrupt

0 = Disables the RB port change interrupt

TMR0IF: TMR0 Overflow Interrupt Flag bit

1 = TMR0 register has overflowed (must be cleared in software)

0 = TMR0 register did not overflow

INT0IF: INT0 External Interrupt Flag bit

1 = The INT0 external interrupt occurred (must be cleared in software)

0 = The INT0 external interrupt did not occur

RBIF: RB Port Change Interrupt Flag bit⁽¹⁾

1 = At least one of the RB7:RB4 pins changed state (must be cleared in software)

0 = None of the RB7:RB4 pins have changed state

INTCON2: INTERRUPT CONTROL REGISTER 2



- 🌐 **RBPU: PORTB Pull-up Enable**
 - ☒ 1 = Desabilita os pull-ups do PORTB
 - ☒ 0 = Os pull-ups do PORTB são habilitados por valores do port LATCH
- 🌐 **INTEDG0: External Interrupt 0 Edge Select**
 - ☒ 1 = Interrupção na rising edge
 - ☒ 0 = Interrupção na falling edge
- 🌐 **INTEDG1: External Interrupt 1 Edge Select**
 - ☒ 1 = Interrupção na rising edge
 - ☒ 0 = Interrupção na falling edge
- 🌐 **INTEDG2: External Interrupt 2 Edge Select**
 - ☒ 1 = Interrupção na rising edge
 - ☒ 0 = Interrupção na falling edge
- 🌐 **Unimplemented: Read as 0**
- 🌐 **TMR0IP: TMR0 Overflow Interrupt Priority**
 - ☒ 1 = High prioridade
 - ☒ 0 = Low prioridade
- 🌐 **Unimplemented: Read as 0**
- 🌐 **RBIP: RB Port Change Interrupt Priority**
 - ☒ 1 = High prioridade
 - ☒ 0 = Low prioridade

TMR0IP

TMR0IP