



PIC 18XXX Int svar

Lkaa
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Programkode

- `#include <htc.h>`
- `#define TMR0L_reload -200; //hvorfor ikke +200?`

- `static unsigned char count;`

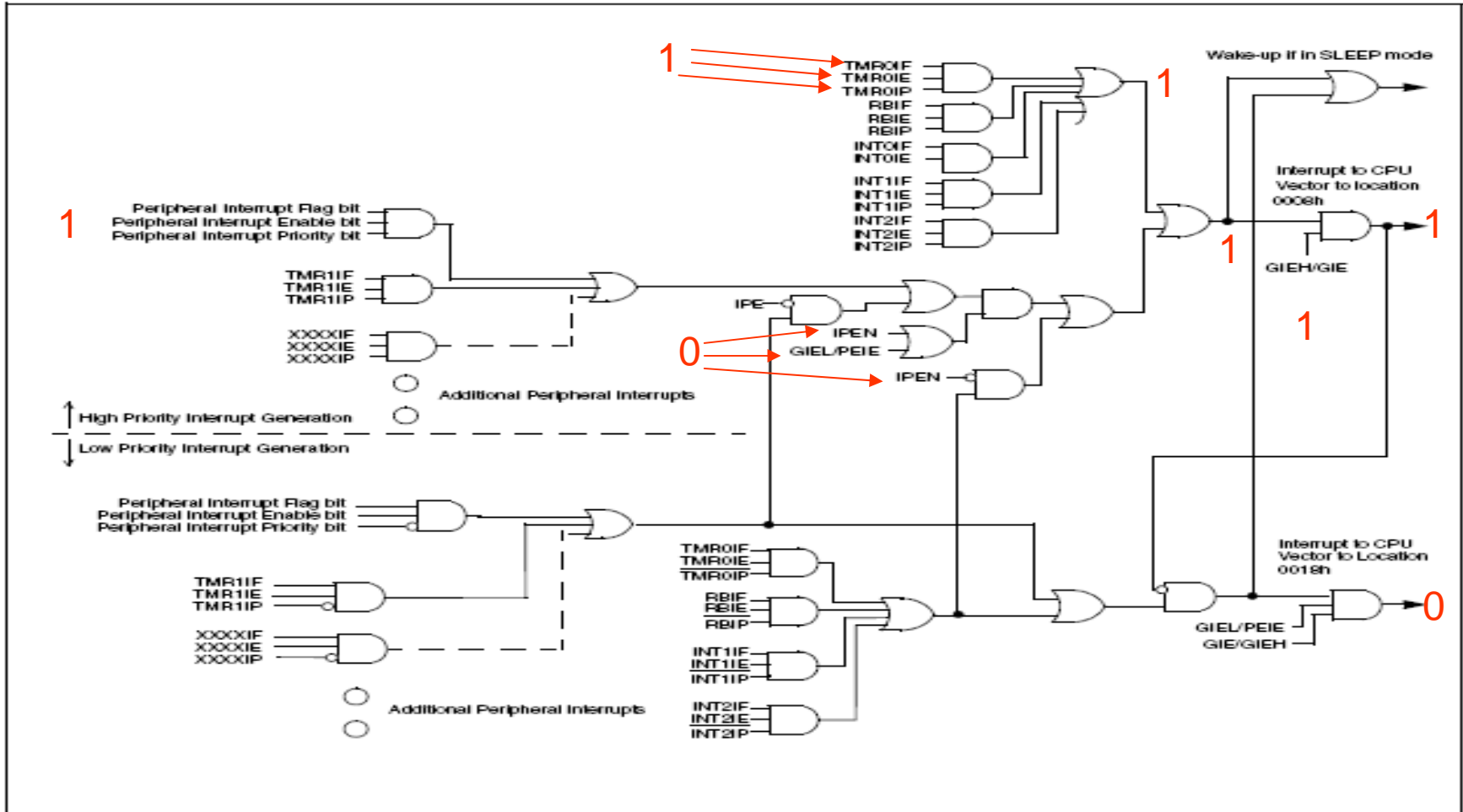
- `void init(void)`
- `{`
- `PORTB = 0;`
- `TRISB0 = 0;`
- `TRISB1 = 0;`
- `TRISB2 = 0;`
- `TRISB3 = 0;`
-
- `TMR0L = TMR0L_reload;`
- `TOCON = 0b11000111; //Skriv nogle kommentarer!`
-
- `TMROIE = 1;`
- `TMROIP = 1;`
- `IPEN = 0;`
- `GIEL = 0; //hvorfor står der ikke PEIE?`
- `GIEH = 1;`
- `}`
-

Programkode

- void interrupt timer_0(void)
- {
- count++;
- PORTB = count & 0x0f;
- TMR0L = TMR0L_reload;
- TMROIF = 0;
- } // hvor lang tid går fra TMROIF bliver sat
- // til vi er tilbage i main()?
-
- void main(void)
- {
-
- init();
-
- while(1)
- {
- //her kunne godt foregå noget fornuftigt.
- }
- }

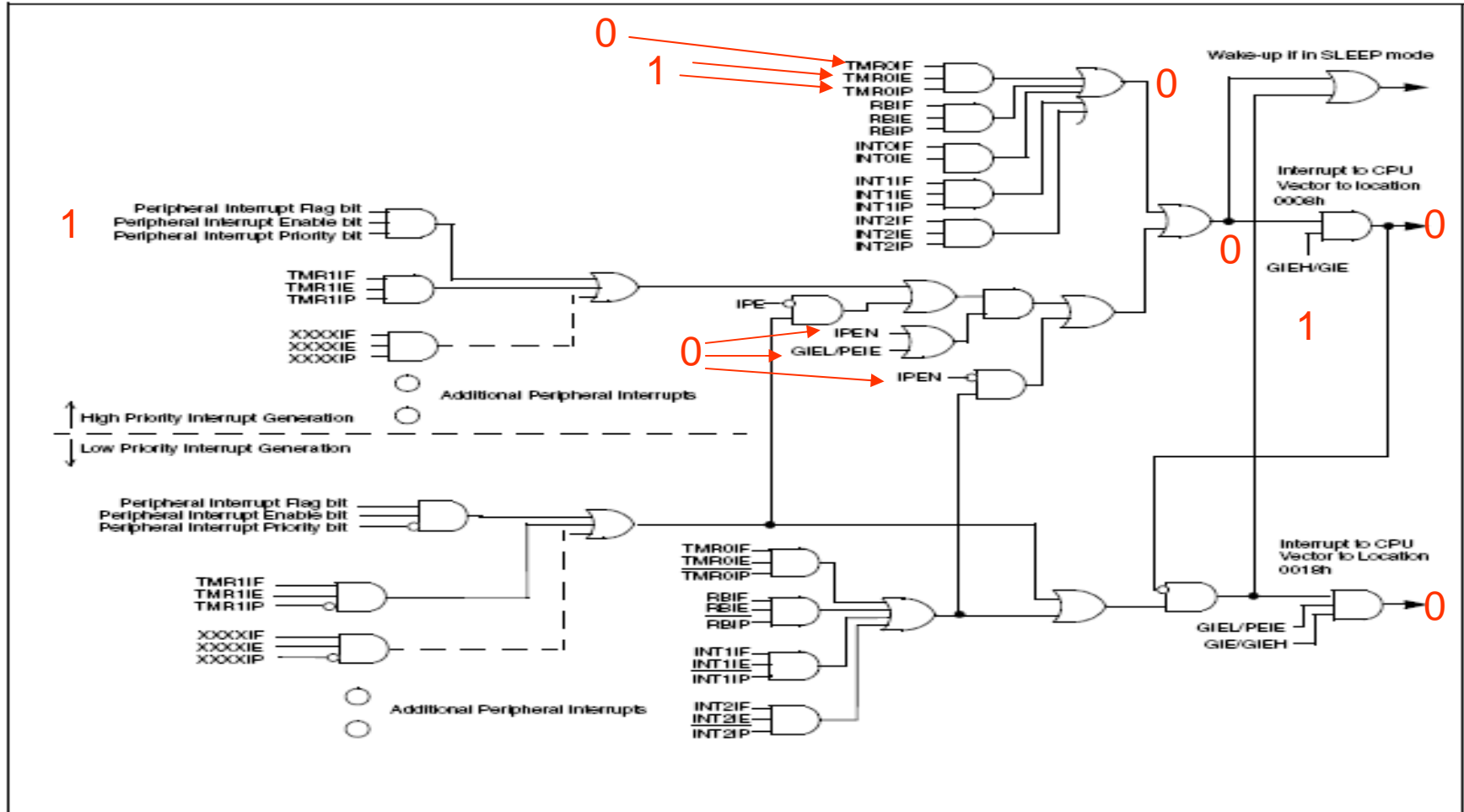
Interrupts (S.76)

FIGURE 8-1: INTERRUPT LOGIC



Interrupts (S.76)

FIGURE 8-1: INTERRUPT LOGIC



Int. Register (S.77)

REGISTER 8-1: INTCON 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
bit 7							bit 0

bit 7 **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

bit 6 **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

0 = Disables all low priority peripheral interrupts

Int. Register (S.77)

- bit 5 **TMR0IE:** TMR0 Overflow Interrupt Enable bit
1 = Enables the TMR0 overflow interrupt
0 = Disables the TMR0 overflow interrupt
- bit 4 **INT0IE:** INT0 External Interrupt Enable bit
1 = Enables the INT0 external interrupt
0 = Disables the INT0 external interrupt
- bit 3 **RBIE:** RB Port Change Interrupt Enable bit
1 = Enables the RB port change interrupt
0 = Disables the RB port change interrupt
- bit 2 **TMR0IF:** TMR0 Overflow Interrupt Flag bit
1 = TMR0 register has overflowed (must be cleared in software)
0 = TMR0 register did not overflow
- bit 1 **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
- bit 0 **RBIF:** RB Port Change Interrupt Flag bit
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
- Note:** A mismatch condition will continue to set this bit. Reading PORTB will end the mismatch condition and allow the bit to be cleared.

Legend:

R = Readable bit

W = Writable bit

U = Unimplemented bit, read as '0'

- n = Value at POR

'1' = Bit is set

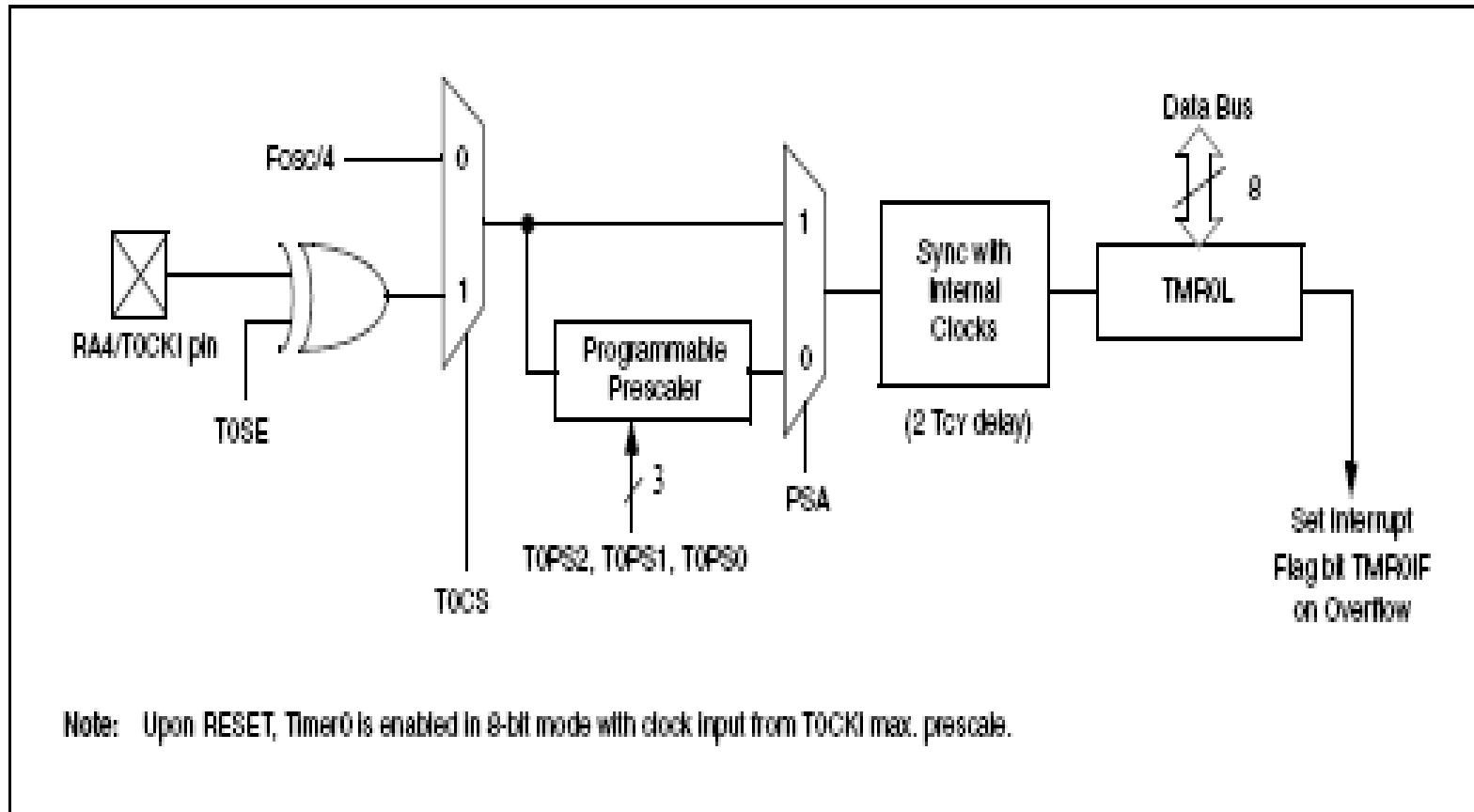
'0' = Bit is cleared

x = Bit is unknown

Skifter INT
Løkken!

Timer0

FIGURE 10-1: TIMER0 BLOCK DIAGRAM IN 8-BIT MODE



Timer0

REGISTER 10-1: 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
bit 7							bit 0

bit 7 **TMR0ON:** Timer0 On/Off Control bit

- 1 = Enables Timer0
- 0 = Stops Timer0

bit 6 **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

bit 5 **T0CS:** Timer0 Clock Source Select bit

- 1 = Transition on T0CKI pin
- 0 = Internal instruction cycle clock (CLKO)

bit 4 **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

bit 3 **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.

bit 2-0 **T0PS2:T0PS0:** Timer0 Prescaler Select bits

- 111 = 1:256 prescale value