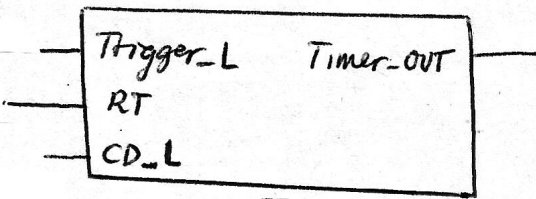
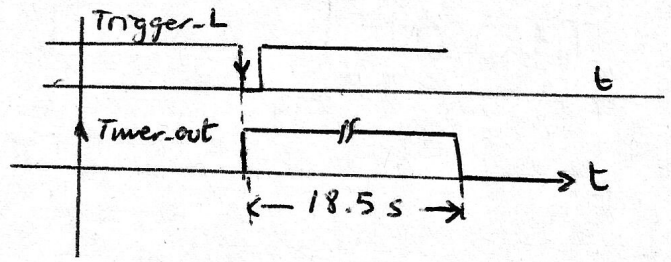


Adaptations to the PIC18F4520 using the TMRO

ENTITY

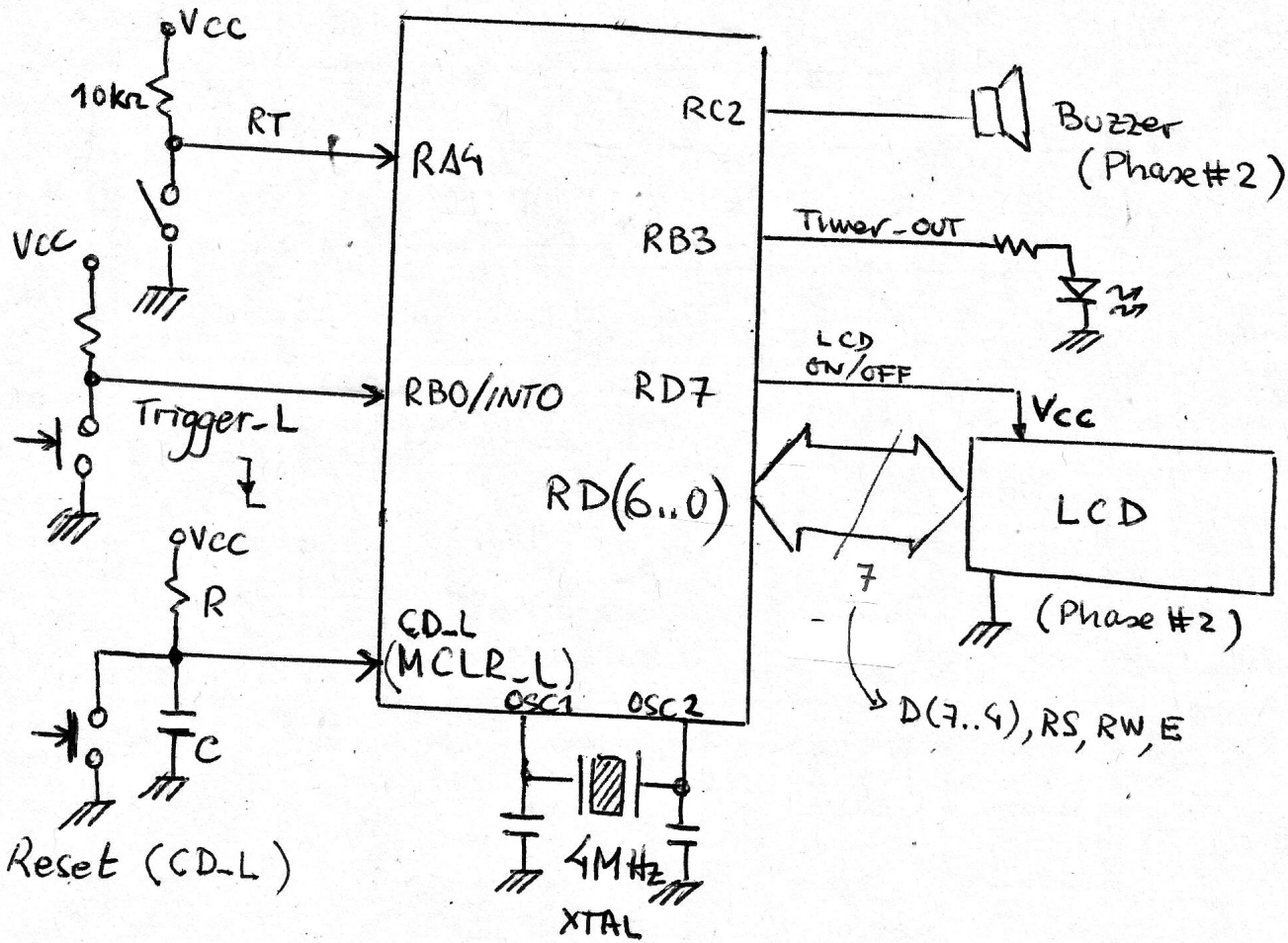


Timer-TMRO
Timer-TMRO-LCD



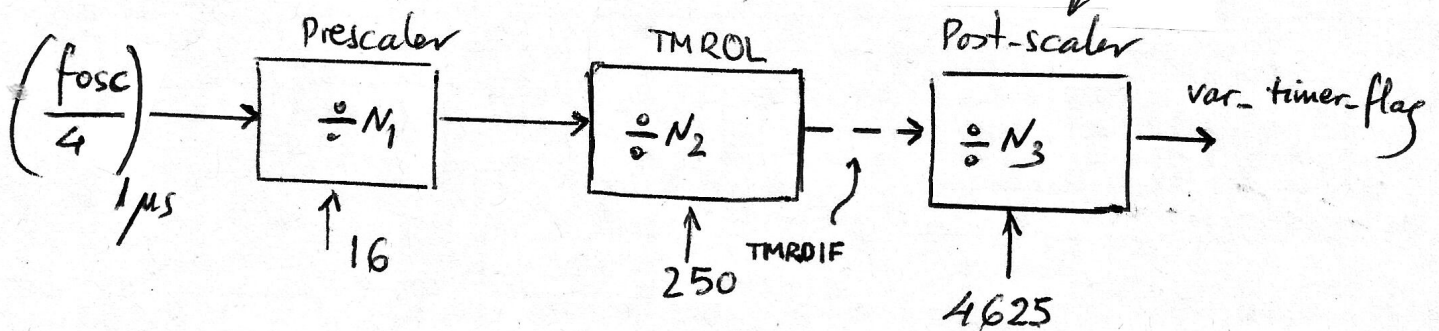
Hardware

Phase#2



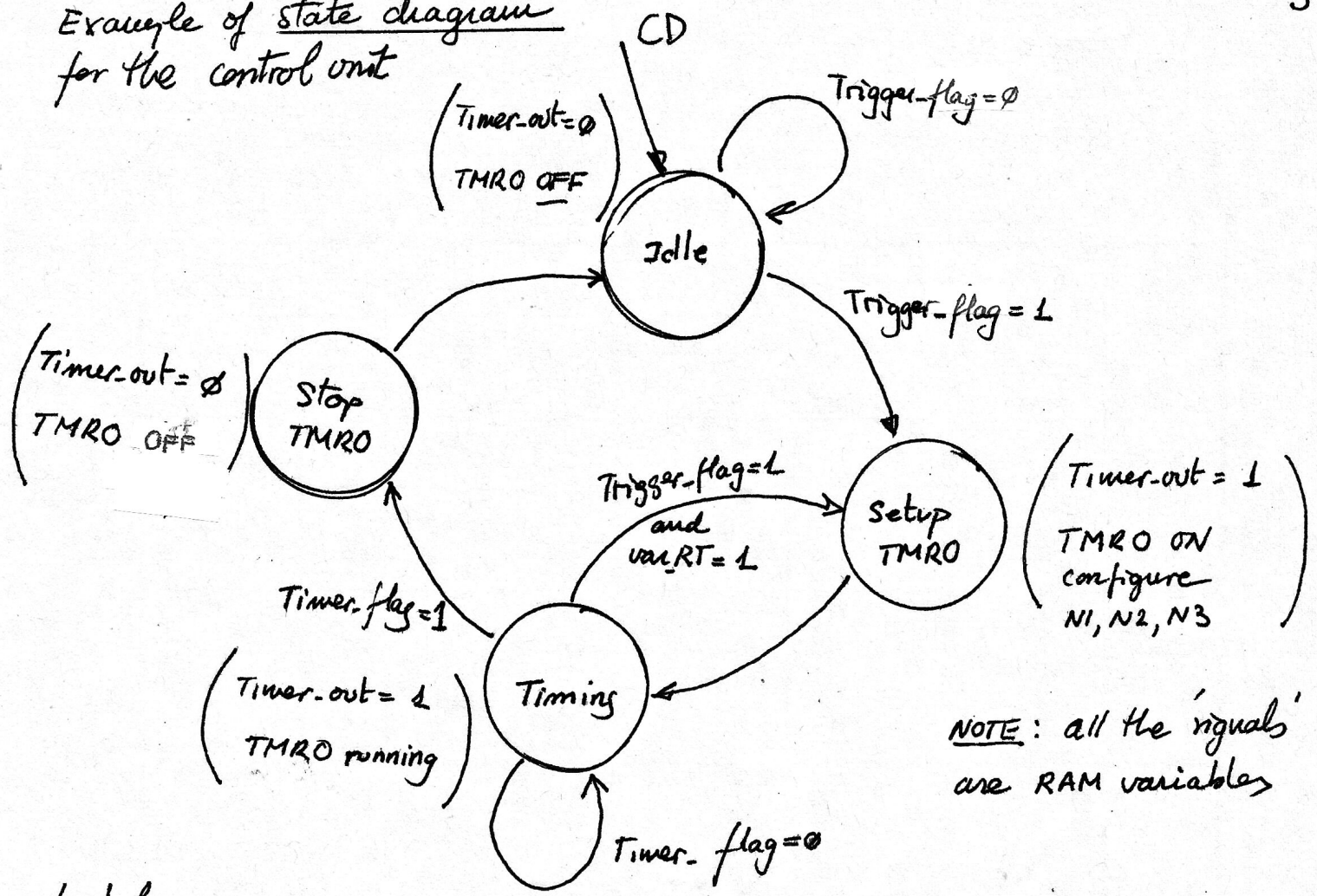
$$\text{Timing period} = (4 \cdot T_{\text{OSC}}) \cdot N_1 \cdot N_2 \cdot N_3$$

int (16 bit)
RAM variable



$$\text{Timing period} = 1\mu\text{s} \cdot 16 \cdot 250 = 18500000\mu\text{s}$$

Example of state diagram for the control unit



* output logic

current state	Timer-out	TMRO control signals
Idle	0	$TMROON = 0$ $TMROIE = 0$ } stopped
Setup-TMRO	1	$TO2BIT = 1, TMROIE = 1, PSA = 1, TOCS = 0$ $TOPS = '011' (1/16), TMRO = 256 - \underbrace{var-TMRO-N_2}_{N_2}$ $(var-post-scaler-N_3 \rightarrow N_3)$ $\rightarrow N_1$ $TMROON = 1$ (start the peripheral)
Timing	1	keep the timer running. The $TMROIF$ generates interrupts to be counted by the $var-post-scaler$ until $var-post-scaler-N_3$, when the $var-Timer-flag = 1$
Stop-TMRO	0	$TMROON = 0$ $TMROIE = 0$ } stopped

* state logic is as usual (see the PIO examples to copy and adapt)