

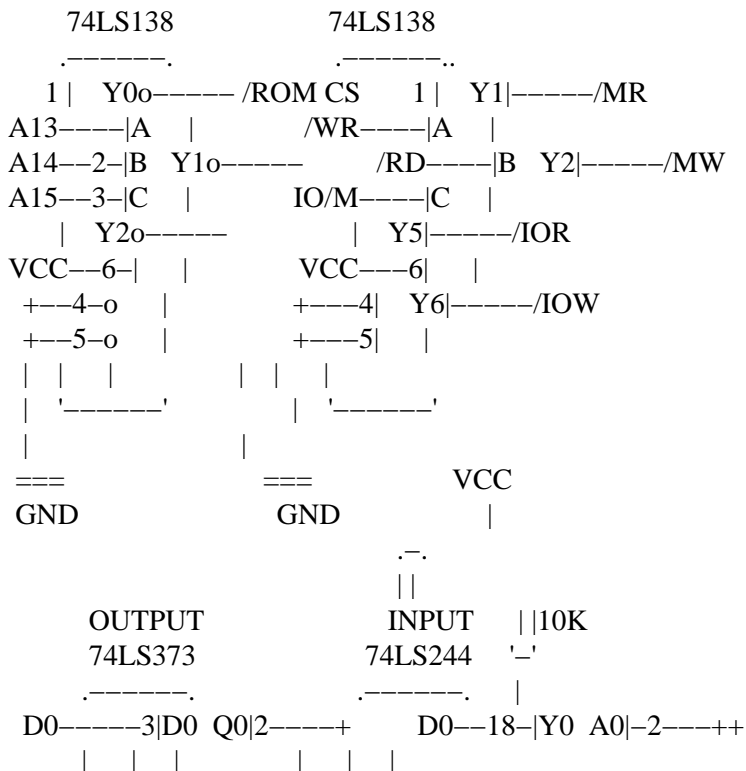
Re: 8085 SBC needs help

Source: <http://sci.tech-archive.net/Archive/sci.electronics.basics/2008-02/msg00033.html>

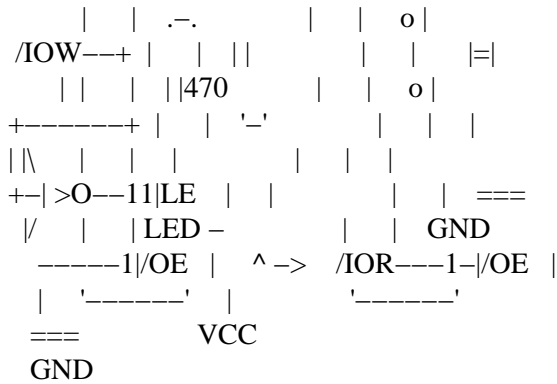
- *From:* Allen Bong <allenbsf6502@xxxxxxxxxx>
- *Date:* Sat, 2 Feb 2008 01:56:33 -0800 (PST)

On Feb 2, 10:25 am, Allen Bong <allenbsf6...@xxxxxxxxxx> wrote:

I have wired a simple SBC based on the basic 8085 chip. Using 74LS373 as a latch clocked by ALE, 2716 for program storage, 2x 74LS138 for decoding the /CE for 2716 and the /IOR, /IOW, /MR and /MW signals. I need only 1 bit input and 1 bit output so I used 74LS373 for input and 74LS244 for output. The input is connected to a switch and output connected to a LED. When the switch is making, the LED will flash at about 1Hz. When the switch is off, the LED goes off. There was no RAM as my program doesnt use subroutines. Actually the program is less than 256 bytes so I tie A8-A10 of the 2716 to ground. Below is the connection of the 2 decoders and the I/O.



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(created by AACircuit v1.28.6 beta 04/19/05www.tech-chat.de)

And the program I wrote to test the circuit.

```
.equ sensor, h'00
.equ led, h'00

.org h'0000

start: mvi a,h'ff ;turn off led at start
       out led
mloop: in sensor ;check sensor
       rar
       jnc led_on
       jmp mloop
led_on: mvi a,h'00 ;turn on led
       out led
delay1: lxi d,h'ffff
dloop1: nop
       dex d
       jnz dloop1
       mvi a,h'ff ;turn off led
       out led
delay2: lxi d,h'ffff
dloop2: nop
       dex d
       jnz dloop2
       jmp mloop
.code
.end
```

I was wondering if I didnt fully understand the instructions correctly or the hardware was in problem. On the 74LS138 I used for memory decoding, I was getting pulses on all the output instead of just Y0 output. The IO/M pin was a permanent lo and the /WR signal from 8085 was always high. Do I need extra signals on the enables for the decoders to decode

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correctly?

Any feedback is much appreciated. Thank you.

Allen

I have just spotted a software mistake. The DCX D dosent affect the zero flag when decrements through zero, so my program must have stucked in a loop. SOme correction was made after the DCX D.

```
dloop1: nop
dcx d
mov a,d
ora e
jnz dloop1
[snip]
dloop2: nop
dcx d
mov a,d
ora e
jnz dloop2
jmp mloop
```

I have also included a link if you want to take a look at the schematic.

<http://www.flickr.com/photos/11236051@N08/2236545530/>

Allen

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