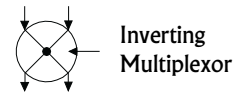


The IMx Inverting Multiplexor



The Inverting Multiplexor is a crossed pair of double independent "MattMuxes" and two double-buffered selectable Vcc sources.

The circuit is bilaterally divided, with a mux and associated electronics on each half of the module. Each input is paired with its output directly beside it, as labeled with the arrows.

Each Mux is triggered by a ground signal to the large rectangular input pads at the middle front of the module. The Mux will then invert the signal given to it for a time constant determined by C1/R3 and C2/R4.

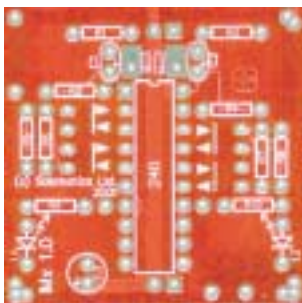
To increase the time required to activate the Mux, you can cut the trace under R1/R2, and add resistors at these points. This is an effective way to reduce "false-triggering" of the sensors.

Necessary Parts:

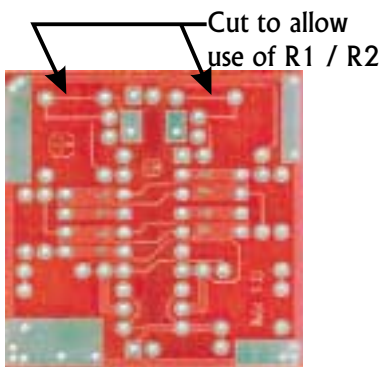
- 1 x 74AC240
- 2 x 6.8 μ F Mux Time Capacitor (C1, C2)
- 2 x XX Ω Mux Time Resistor (R3, R4)
- 4 x 47k Ω Signal Bypass Resistors (Yel/Pur/Or) (R5 - R8)
- 1 x 22 μ F Electrolytic Pwr Filtration Capacitor (C3)
- 2 x LED (L1, L2)
- 2 x 470 Ω LED Resistors (Yel/Pur/Brn) (R9, R10)

Other Parts:

- 2 x XX Ω Mux Enable delay time Resistor (R1, R2)

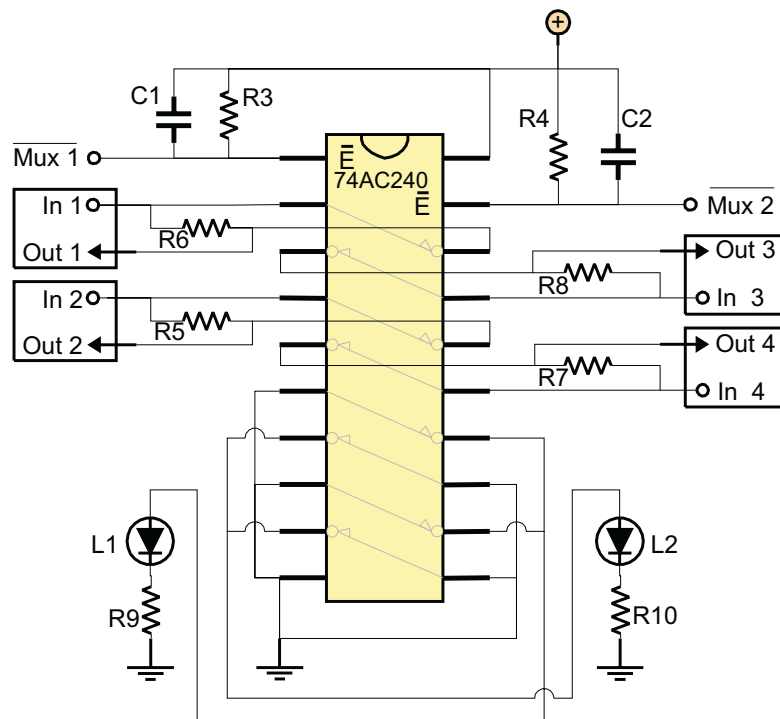


Top



Bottom

- Edge Rail of PCB is Ground (-).
- Center Rail down middle is Vcc (+).
- One Mux & associated electronics on each side of the Module.
- Each channel input has associated output next to it.
- Activate each Mux by touching Mux input to Ground (-).
- Use each Vcc source to power LED Muxing indicators.



The IMx Inverting Multiplexor

Use the following table to calculate the (approximate) values needed to get your required Multiplexor "on" time.

Read the desired time value from the bottom, follow the line up to one of the three resistor value lines, and go across to the required capacitor value.

Example:

You need a 16 second Mux "on" time.

- 1) Find 16 seconds on the bottom
- 2) Follow it up to one of the three capacitor lines (this example uses $6.8\mu\text{F}$)
- 3) Follow the line across to the left side, and read the needed resistor value ($\sim 2.9\text{ MOhm}$)

So to 16 seconds, use a C1 and C2 capacitor value of $6.8\mu\text{F}$ each, a R3 and R4 resistor value of 2.9M each.

IMx Timer Component Selection

