

Debugging Suggestions:

- Insert STAA 0x6000, attach the scope to Y4 and see if it pulses.
- Tell the controller to toggle the pin's voltage on TOC3/TOC4 and attach it/them to the scope.

Op Amps

No current flows into the terminals. This implies that there is a very large resistance between the two terminals.

Virtual short circuit – it appears that $V_+ = V_-$

The standard amplifier chip is the microamp 741 IC. It responds and operates well in the audio frequency range: 20 – 20,000 Hz.

In more complicated designs, a filter will be placed in front of the amplifier.

Motorola recommends that you put a current limiting resistor in the range of 1k and 10k on each ADC pin. This protects the pins from unnecessary current damage. Putting 1k gets better ADC accuracy but less current protection. Putting in a 10k resistor gives you more current protection, but less ADC accuracy.

Often times, port E pins have 4.7k ohm resistors connected to the ADC pins.