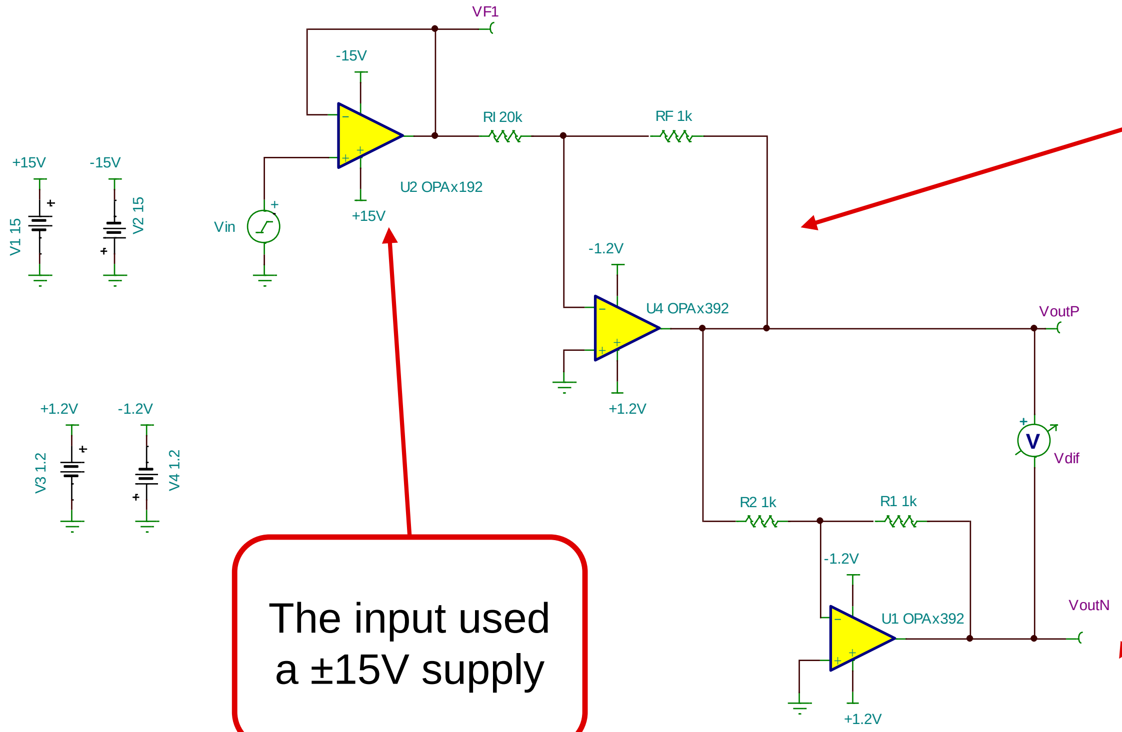
# Single ended to differential
## ±12V single ended to 1.2V differential

Art Kay

6-20-2023

# Single ended to differential ±12V to ±1.2V (dif)




The first stage has a 20:1 attenuator This drops 12V to 0.6V.

The input used a ±15V supply

The next stage inverts the previous stage. If the previous stage is +0.6V this stage is -0.6V. Thus Vout(dif) = 0.6 – (-0.6) = 1.2V

# Single ended to differential ±12V to ±1.2V (dif)

- Here is the DC sweep results for -12V to +12V.
- -0.6V < VoutP < 0.6V
- -0.6V < VoutN < 0.6V
- -1.2V < Vdif < 1.2V
- The ranges satisfy the absolute maximum, Absolute input voltage, and the differential input voltage.
- The two output amplifiers have ±1.2V supplies. This limits the output of these amplifiers to 1.2V which is within the ABS MAX for the ADS121M03. Note that on startup you can get transient amplifier outputs equal to the supply regardless of input signals. This is why it is useful to limit the supplies to a level inside the absolute maximum.