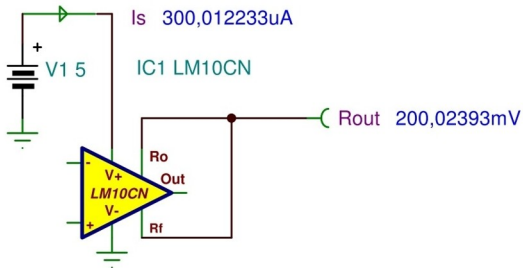


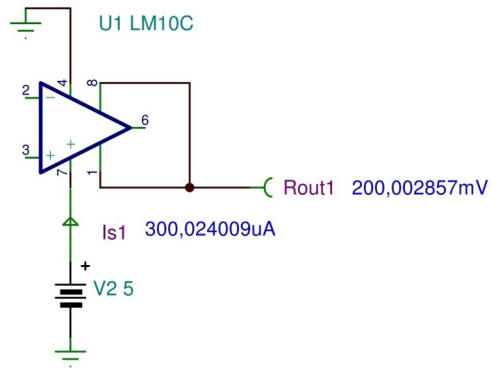
LM10 Operational Amplifier and Voltage Reference Macromodel

The reference amplifier of the original model is an ideal opamp. This is not correct in the reality, if the amplified reference voltage is too close to the positive power supply voltage. I have corrected the reference section of the LM10C spice model.

DC Characteristics ($V^+ = 5V$, $Ref_{out} = 200mV$)

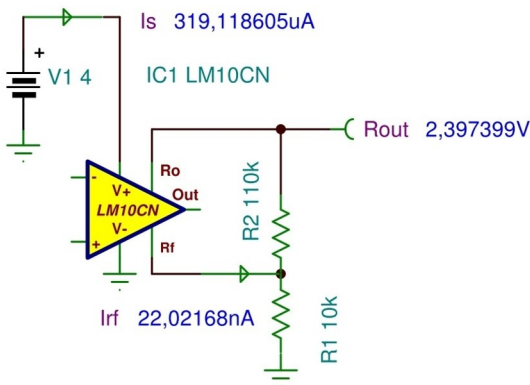


Original model (LM10C)

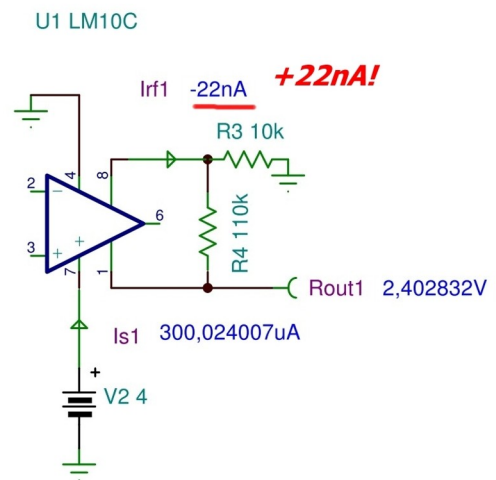


It seems OK :)

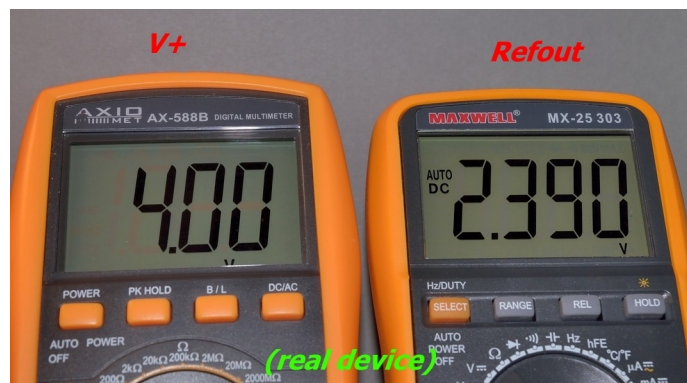
DC Characteristics ($V^+ = 4V$, $Ref_{out} = 2.4V$)



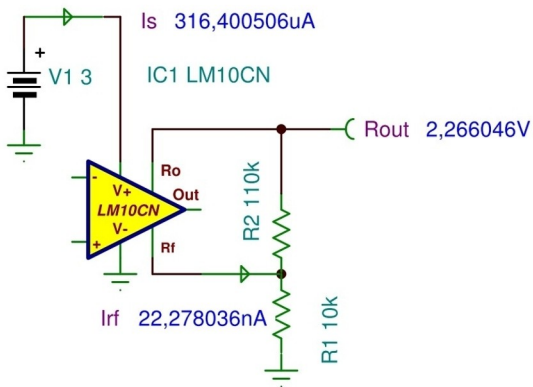
Original model (LM10C)



Model with improved reference amplifier (LM10CN)

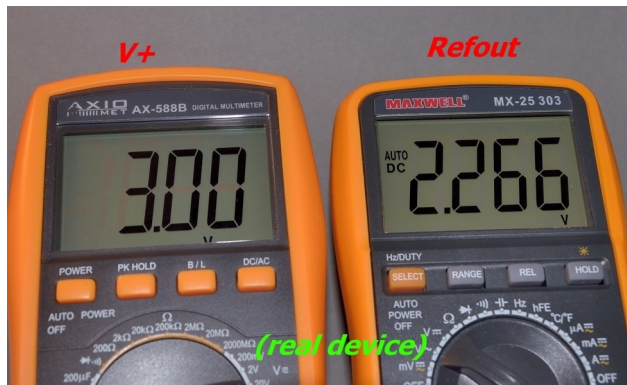
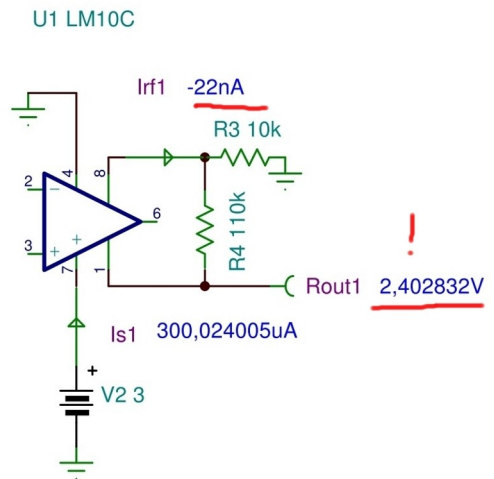


DC Characteristics ($V^+ = 3V$, $R_{out} = 2.4V$)

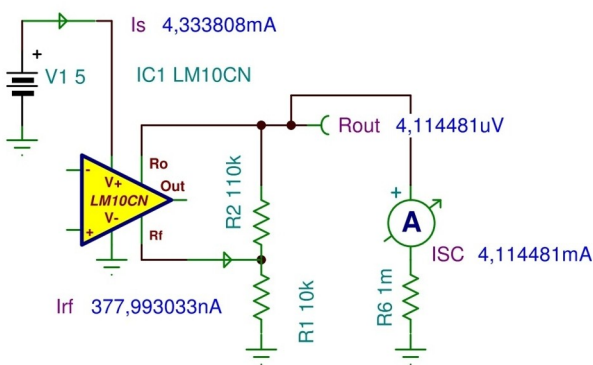


Model with improved reference amplifier (LM10CN)

Original model (LM10C)

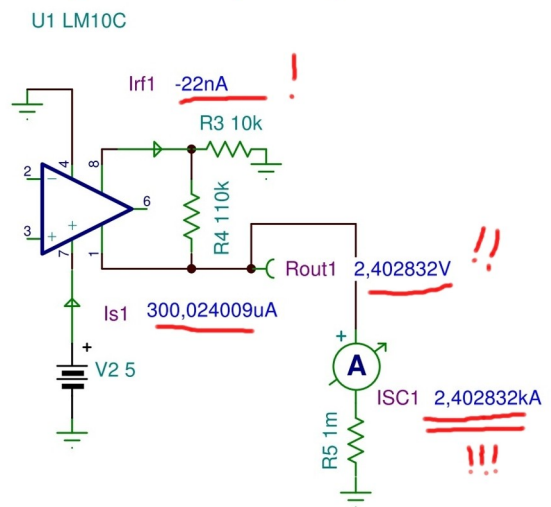


Reference Output Short-circuit Current



Model with improved reference amplifier (LM10CN)

Original model (LM10C)



Zabb Csaba