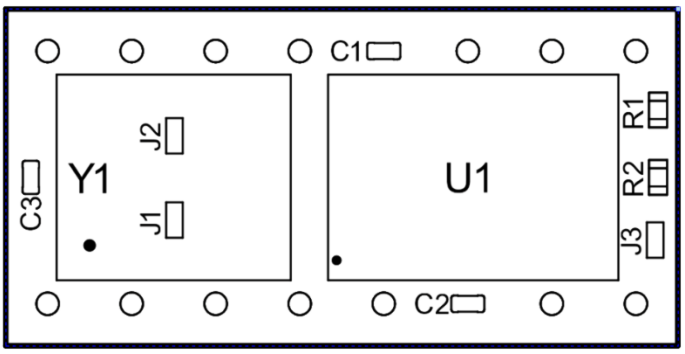
neat8701 assembly instructions

neat8701 can use the crystal on Commodore 64 motherboard or an onboard oscillator. If the crystal on the motherboard is used then Y1 oscillator is left out. You also need to short jumpers J1 & J2 with a solder blob.

neat8701 works on both NTSC & PAL motherboards. If onboard oscillator is used the frequency is 14.31818MHz for NTSC and 17.734475MHz for PAL. Jumper J3 need to be shorted with a solder blob for NTSC units. For PAL units J3 must be left open.

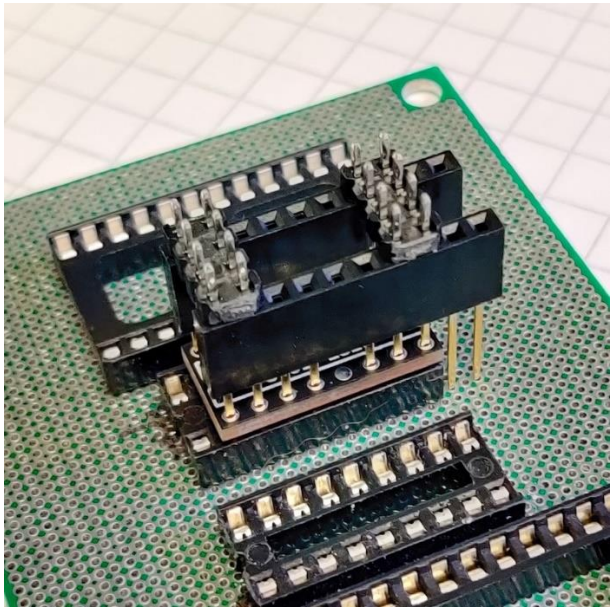
SMD part list:
R1, R2 0402 33ohm resistor
U1 ICS525-01 IC
C1, C2 0402 10nF ceramic capacitor
Y1 CFPS-72 oscillator
C3 0402 100nF ceramic capacitor

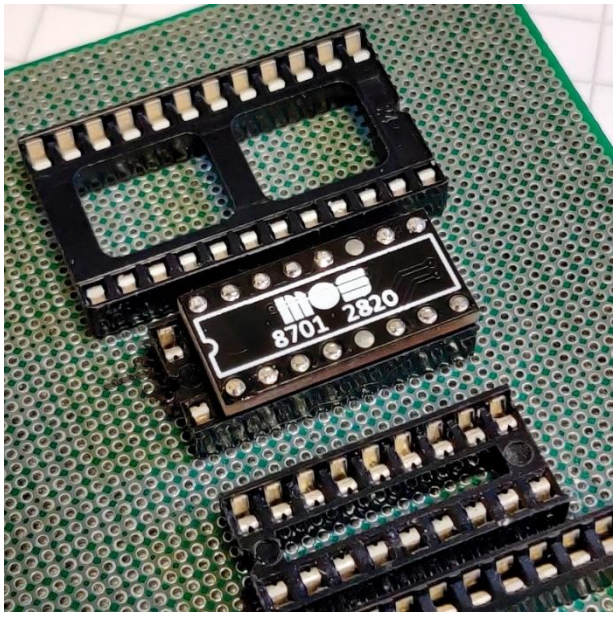


The part U1 ICS525-01 is quite a tight fit. It is easier to solder if the pins are cut shorter. You can cut the straight part of the pins away with flush cut side cutters or even with scissors. Below is an example of an IC with top pins cut and bottom pins waiting to be cut. Some users have successfully soldered unmodified ICs.

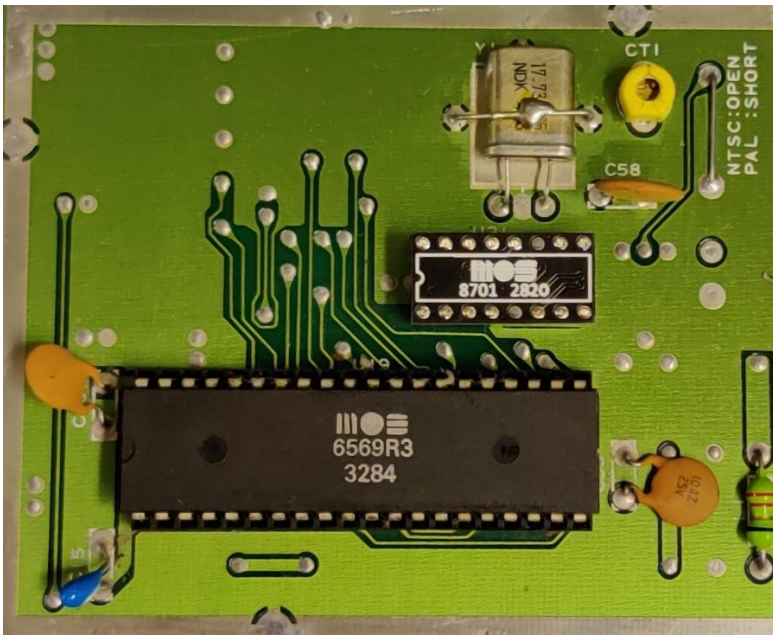
Soldering is recommended to be done in the same order as the part list. See pin 1 markers for U1 & Y1.
After soldering the SMD components to the PCB you need to solder the pins. The pins are from “long leg female headers”. Use a spring leaf DIL socket as a soldering jig. Place the PCB on the socket and push through the headers. Make the PCB as level as possible before soldering the first pin. If the PCB is not level enough heat the one soldered pin and adjust the PCB. Then solder the rest of the pins.

Use flush cut side cutters to cut the pins. Remove the PCB from the socket. Lift from opposite corners to avoid touching the SMD resistors and capacitors.





Install to your Commodore 64 motherboard and enjoy of clean clock signal. In case you need to remove neat8701 PCB from motherboard remember to lift from corners only.



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V1.1 11.08.2020 Added photo & instruction of cut IC pins