

T962A TFT CONTROLLER

BUILD INSTRUCTIONS

Version 1.0.0

10/05/2019

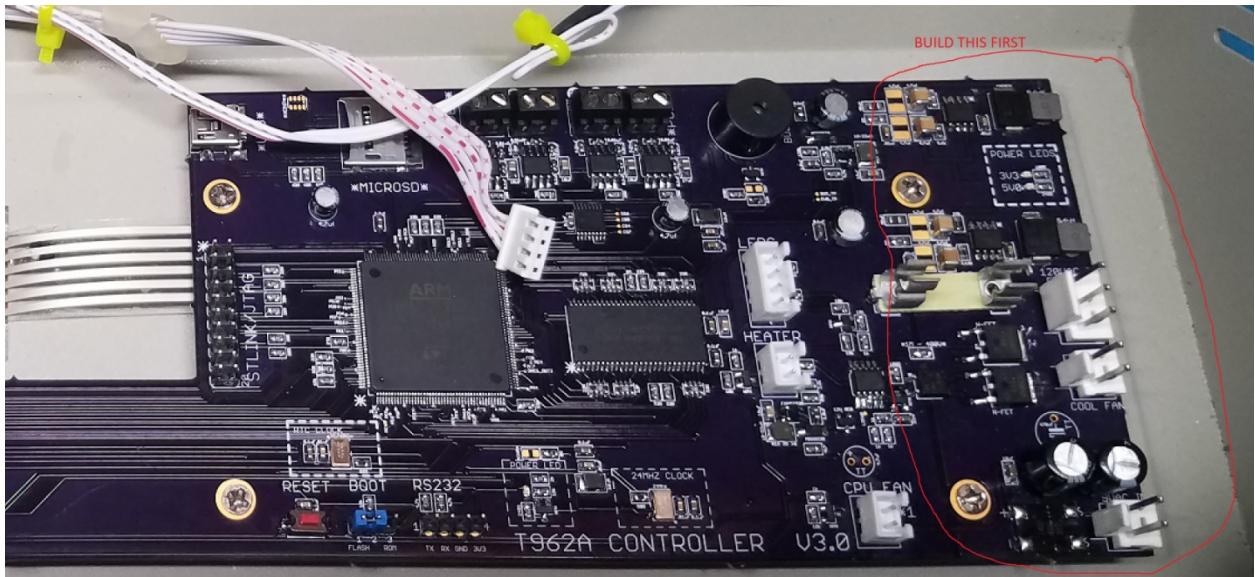
Contents

**** Assembling the T962A V3.0C Controller	3
** 5.0 INCH LCD – BACKLIGHT POWER SUPPLY ** FOLLOW THIS SECTION IF USING THE 5.0" (NHD-5.0-800480TF-ATXL#-CTP).....	5
** 7.0 INCH LCD – BACKLIGHT POWER SUPPLY ** FOLLOW THIS SECTION IF USING THE 7.0" (NHD-7.0-800480EF-ASXN#-CTP)	7
FINAL BOARD ASSEMBLY	9
INSTALLING TFT/LCD PANEL INTO OVEN.....	10

**** Assembling the T962A V3.0C Controller *****

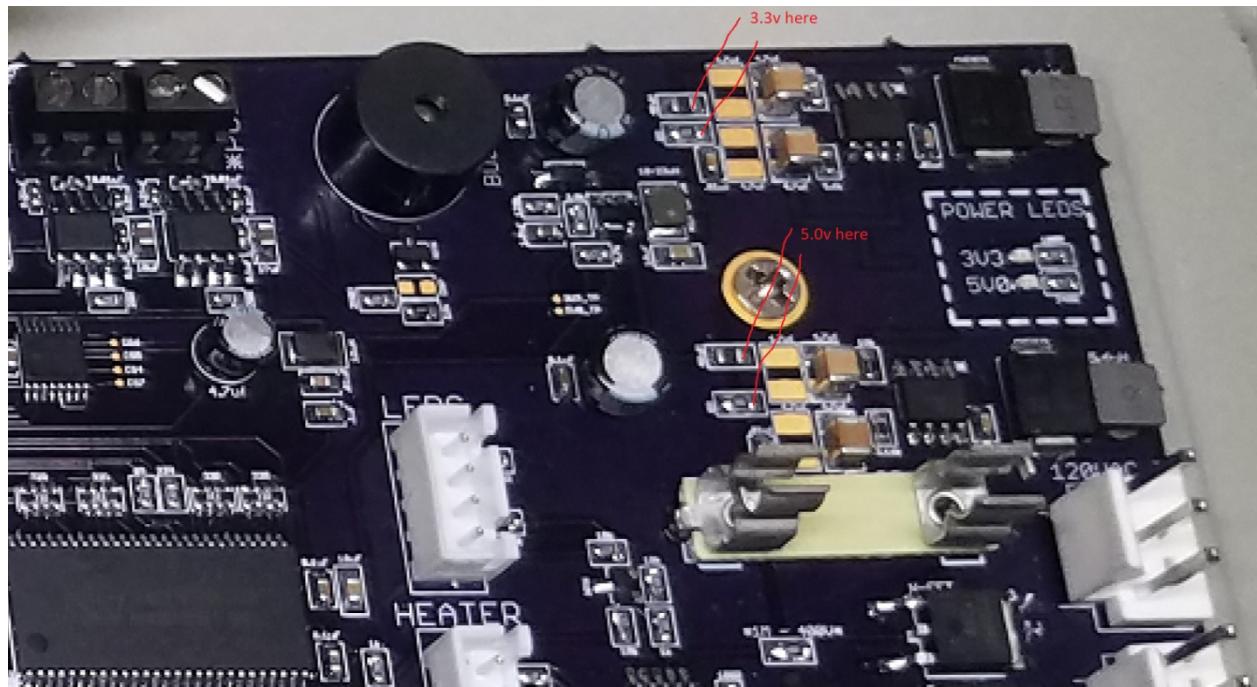
- 1) **FIRST**, It is highly recommended to solder on the most difficult component, the STM32H7 processor, since it is a LQFP-176 pin chip.
(whether using a reflow oven or hand soldering, I've found it much easier to do the processor first, by itself, when the board is nice and empty)
- 2) **SECOND** build the POWER SUPPLY section of the board, the right-most section of the board, as shown in the picture.

Since the power supply on this board (5V & 3.3V) uses switching ICs, you really want to make sure you got all the components correct or you can easily have high/incorrect voltages and blow up everything else. I destroyed an STM32 processor by doing this exact thing, put an incorrect resistor in and the supply put out 12V instead of 3.3v.



- 3) THIRD check the supply voltages once the power supply section is complete.

***** DO NOT MOVE ON UNTIL YOU SEE APPROX. 3.3v AND 5.0v *****

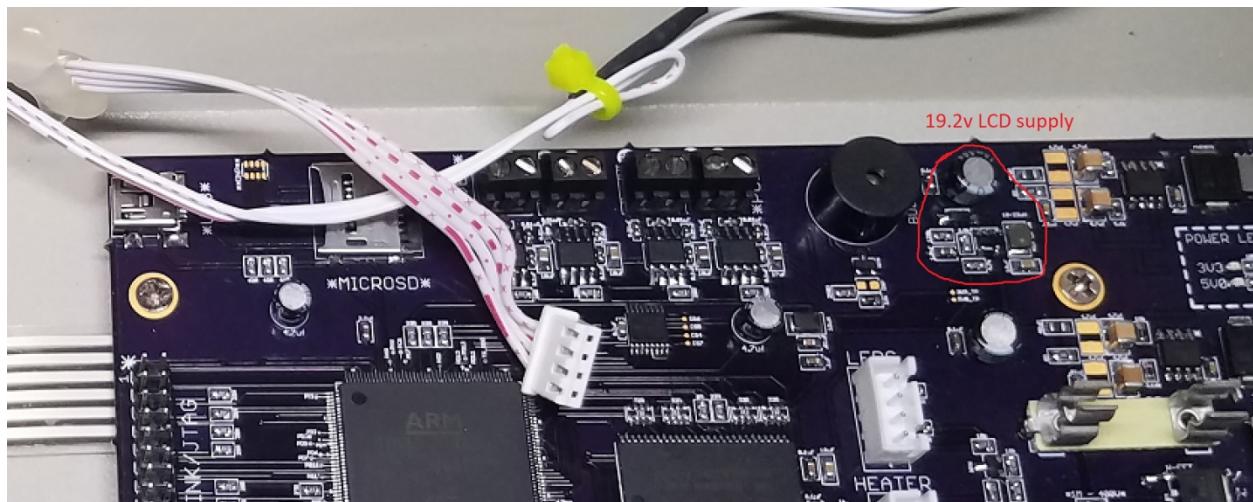


**** 5.0 INCH LCD – BACKLIGHT POWER SUPPLY ****

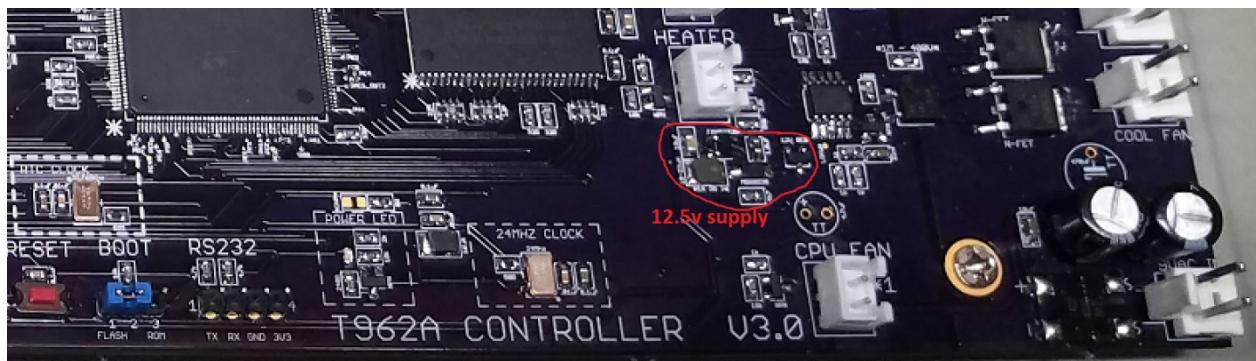
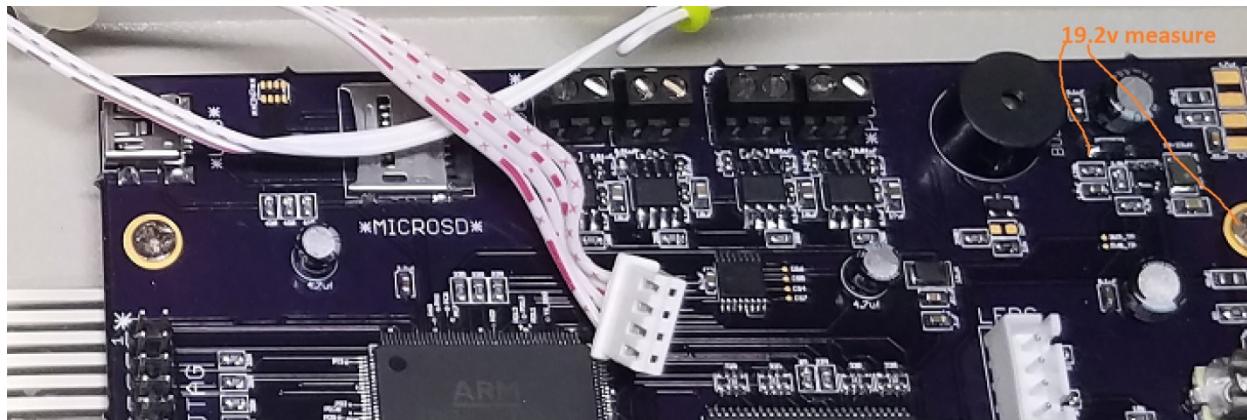
FOLLOW THIS SECTION IF USING THE 5.0" (NHD-5.0-800480TF-ATXL#-CTP)

4) FOURTH build the two FAN5333B boost supply circuits as shown below.

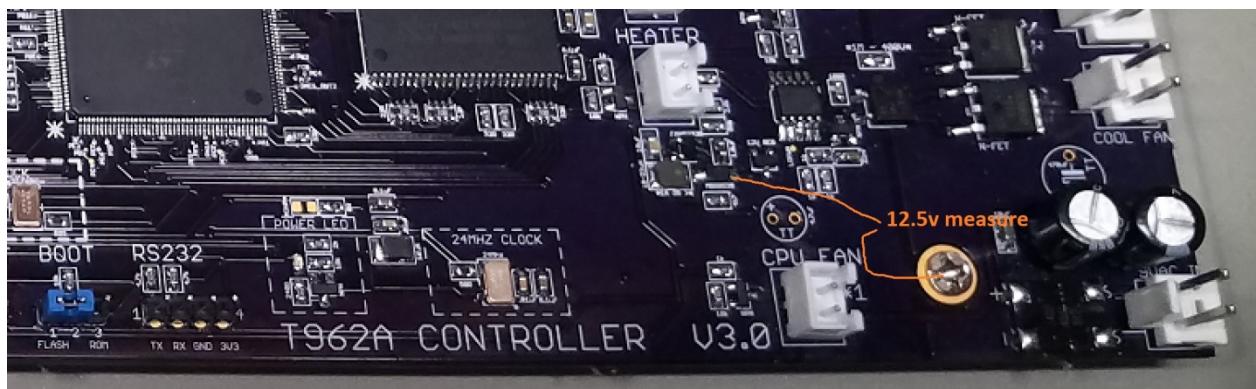
These provide the approx. 19.2v for the LCD backlight and the approx. 12.5v for the FL5160 IC.



*** Measure the 19.2V (approx) supply as shown below: ***



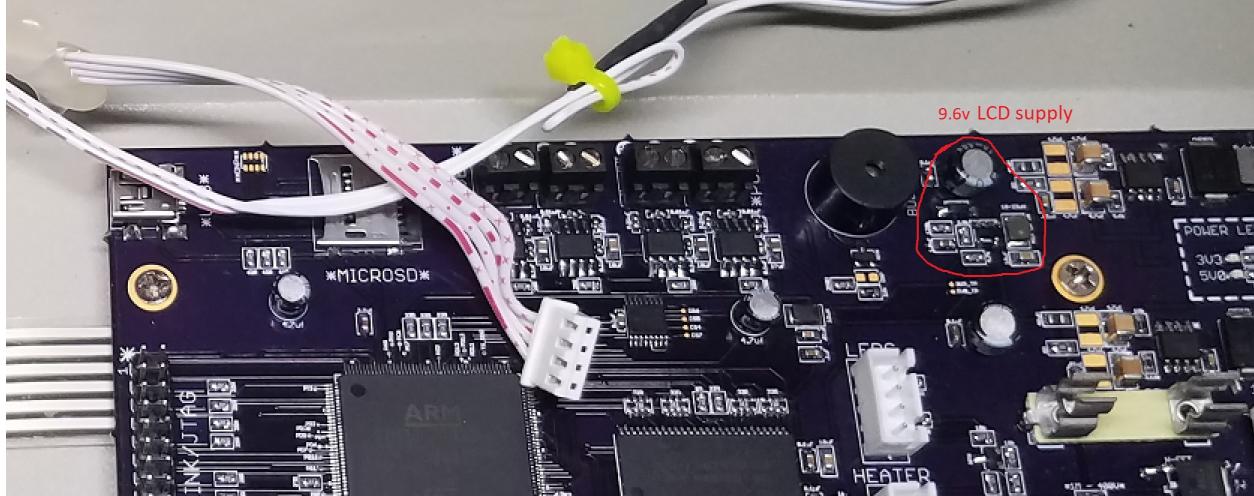
*** Measure the 12.5V (approx) supply as shown below: ***



**** 7.0 INCH LCD – BACKLIGHT POWER SUPPLY ****

FOLLOW THIS SECTION IF USING THE 7.0" (NHD-7.0-800480EF-ASXN#-CTP)

- 4) FOURTH build the two FAN5333B boost supply circuits as shown below.
These provide the approx. 9.6v for the LCD backlight and the approx.
12.5v for the FL5160 IC.

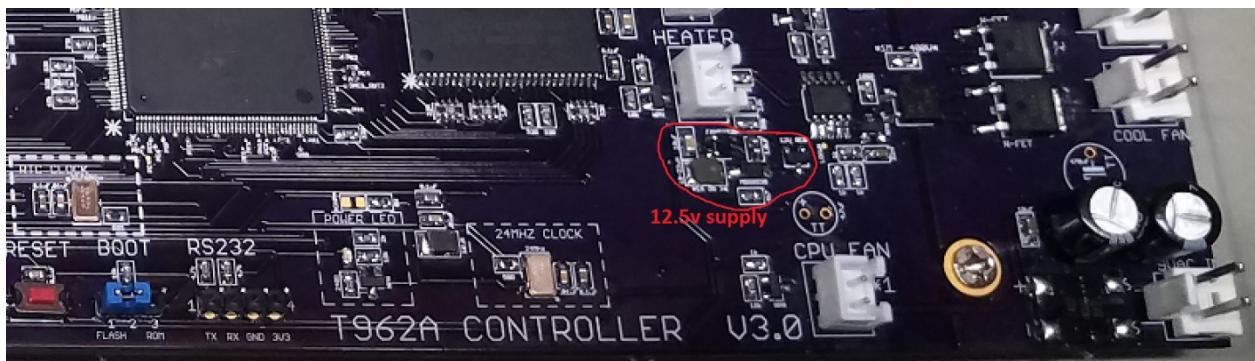
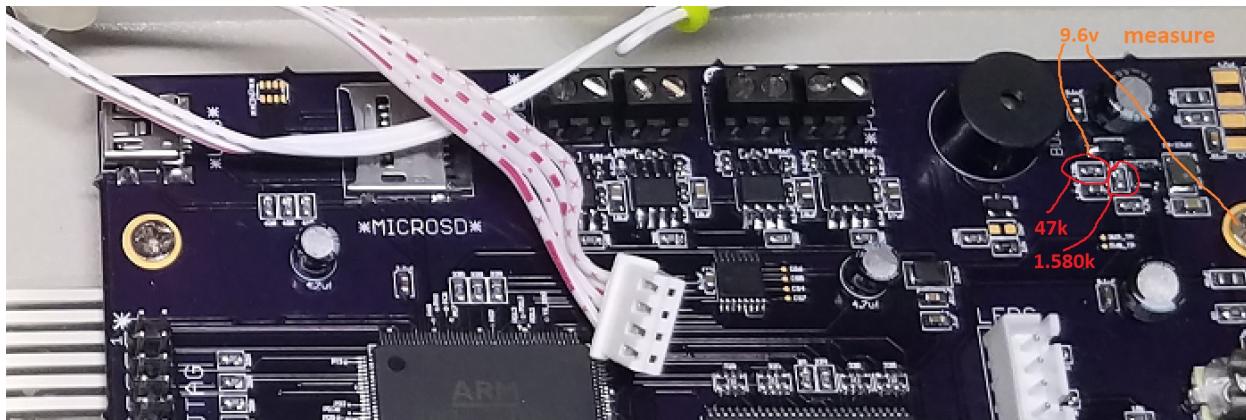


***** Note: *****

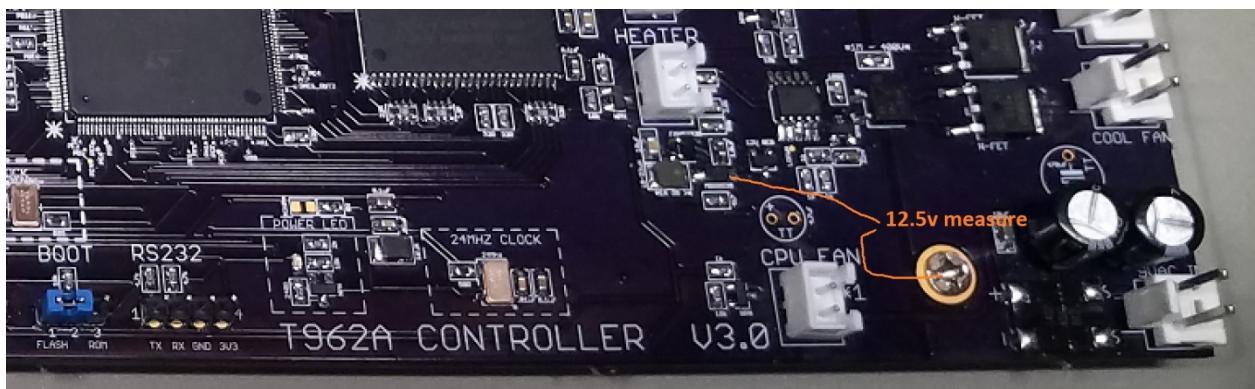
For the 7.0" display, the R61 & R45 resistors are 47k & 1.580k, in order to provide the 9.6v (instead of 19.2v for the 5.0" display).

***** See the image below for the location of the two resistors. *****

*** Measure the 9.6V (approx) supply as shown below: ***



*** Measure the 12.5V (approx) supply as shown below: ***



FINAL BOARD ASSEMBLY

- 4)** At this point the rest of the board can be assembled, as all voltages required have been verified.

**** notice I did leave out some of the power supply capacitors, there is quite a bit of extra capacitance on this board, that you can omit to save cost if required. ****

- 5) *** EXTRA NOTES *****

When mounting this board into your oven, **DO NOT**** use the **red felt insulators** as the OEM board did.**

This board MUST be grounded to the chassis, as it was designed to be properly grounded with the rest of the oven chassis.

*****See the above pictures, all of the mounting screws are directly mounted to the PLATED MOUNTING HOLES*****

The 2 left mounting holes (where the old LCD screen was) sit a bit higher than the other 4 holes...

you can use the old RED FELT insulators as spacers on the UNDERSIDE of the board when mounting it (or you can user

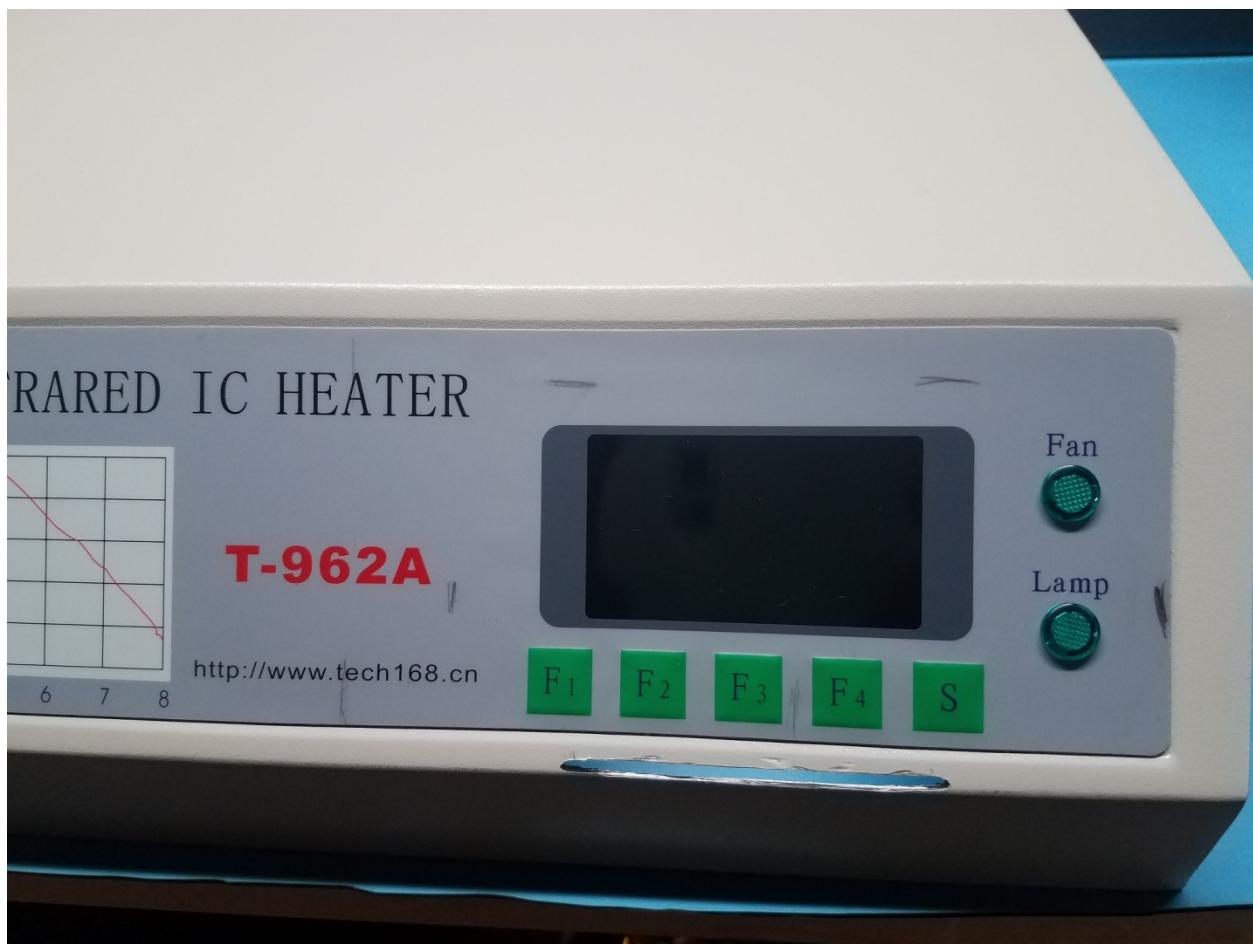
metal washers as well) to make the board sit evenly across all 6 mounting holes without any flexing.

INSTALLING TFT/LCD PANEL INTO OVEN

- 1) First remove the top cover from the oven, and detach all wires so that the cover can be worked on by itself.**
- 2) You will need a dremel tool (or something similar) to cut a long slot that runs from around the “F1” button to the “S” button.**

**** This will be the slot that the LCD ribbon cable can pass through ****

- 3) Dremel the slot out enough so it easily clear the ribbon cable (ie making the opening like the thickness of a PCB).**



- 4) Below is a picture of the Dremel tool I used, just a standard cutting wheel it came with, I went through a couple of them to finish the slot, but they are cheap.



5) * Mount the PCB board FIRST into the oven before you attempt to mount the LCD *****

The LCD ribbon cables are very fragile and easy to rip, so you want to install this last and TAKE YOUR TIME.

6) Gently hold the LCD panel up to the oven cover, feed the ribbon cable through the slot, and line it up with the

larger connector. That is the cable you want lined up as much as possible.

- 7) Mark where your LCD panel is on the case, and use double sided sticky tape or whatever else to mount the panel to the cover. ** Make sure you mount it firmly, if it falls off after you connect the ribbon cables, it's almost certain the cables will rip from the lcd falling off.
- 8) Once the LCD is firmly mounted to the cover, go inside and get the ribbon cables attached. Make sure you can slide and clip in the 40-pin cable without having to twist or pull it to the side. If it's not aligned, then adjust your LCD screen position.

*** Be very very careful with these cables, I've ruined two screens by being too aggressive and sliced the cables, and destroyed the panels. ***

FYI, SEE picture below.....

