

XF551 PCB w/Some Original Parts Salvaged

This is a combination BOM and quick tips paper. These following original parts should be easy to desolder from the original board and assuming they are still good should be able to be used again. Due to the fixed footprint of some of these parts, substitution with more modern parts may not be possible. The quantity listed is per board. If you have more than one board, then multiply the listed number by the number of boards you have.



- Intel 8040/8050 CPU (1) (U1)
- WD1772PH Disk Controller (1) (U2)
- 27C64 Eprom/Prom (1) (U6) (Can be programmed with one or two OSs)
- 8.33333MHz OSC (1) (Y1) (Not pictured)
- SN74LS373 Octal D-Type Latch (1) (U5)
- SN74LS14N Hex Schmitt-Trigger (1) (U4)
- SN74LS38N Quad 2-Input Logic Gate (1) (U3)
- *4607KX-101-472LF 4.7K Resistor Network SIP (1) (RN1)

7805 Linear Voltage Regulator 5.0V 1 A (1) (Q5) (Absolute last part to install w/Heat Sink)
7812 Linear Voltage Regulator 12V 1.5A (1) (Q6)
1N4001 Diode (2) (D2 & D3) (Don't mix them up with the zener diode)
1N4728 Zener Diode(1) (ZD1)
4700 uF 35V Electrolytic Capacitors (3) (C102, C103 & C104)
47 uF 16V Electrolytic Capacitors (2) (C109 & C110)
1 uF Electrolytic Capacitor(1) (C113)
.033 uF 50V Film Capacitors(Yellow) (5) (C101, C111,C112, C7 & C8)
*4.7 K Resistor Network Single Bus (1) (RN1) (See footnote for alt part)
AC Common Mode Choke (1) (L1)
Drive Selector Dip Switch (1) (S2)
Power Switch (1) (S1)
Power Plug (1) (J1) (Some XF551 came with 1050 version power plugs. See note below)
SIO Connectors (2) (J2 & J3)
Drive Data Cable (1) (J4) (Observe Pin 1 orientation)
Disk Drive Power Cable (1) (J5) (Observe Pin 1 orientation, usually red cable)
Heat Sink with screws

That leaves the rest of the parts either too tedious and/or not economical of time or money to remove. As in the transistors you could end up damaging them and have to replace them anyway. Start fresh. If you do reuse any other parts then reuse the resistors. They have the least tendency to be harmed by repeated heating. Verify resistor values with the below listed reference designation. IE don't pair R6 on the original board with R6 listed below for replacement. They may not be the same.

Resistors are relatively generic. Ceramic capacitors are as well. Where specific parts are called for I have listed the part #. Lead spacing is important. All parts can be found on Mouser.com, but may also be found on Digikey.com as well. Some parts are going obsolete, so if I have indicated so, get them now as they may not be had within a very short time.

KSA1015YTA Bipolar PNP Epitaxial Transistor (1) (Q4)
KSC1815YTA Bipolar NPN Epitaxial Transistor (3) (Q1,Q2 & Q3)
Diode 1N914 (1) D1

*4607KX-101-472LF 4.7K Resistor Network SIP (1) (RN1)

.1 uF 50V Ceramic Cap 5.08mm Lead Spacing (10) (C1 – C6, C105 – C108)
27 pF 50V Ceramic Cap 5.08mm Lead Spacing (1) (C10)
18 pF 50V Ceramic Cap 2.54mm Lead Spacing (1) (C9)
EMI471T-RC 470 pF 50V EMI Filter Circuit (1) (LF1)
GBU4A Single Phase 4A Bridge Rectifier (1) (BR1)
BL02RN1R2Q1A 6A Ferrite Bead Leaded (2) (FB2 & FB3) (GET NOW)
BL01RN1A1E1A 6A Ferrite Bead Axial (3) (FB1, FB4 & FB5) (GET NOW)
100 K Ohms 1/4w Carbon Film Resistor (3) (R1, R2 & R3)
10 K Ohms 1/4w Carbon Film Resistor (1) (R7)
4.7 K Ohms 1/4w Carbon Film Resistor (5) (R4, R6,R10,R11 & R16)
3.3K Ohms 1/4w Carbon Film Resistor (3) (R5, R8 & R15)
1 K Ohms 1/4w Carbon Film Resistor (1) (R13)
220 Ohms 1/4w Carbon Film Resistor (1) (R12)
150 Ohms 1/4w Carbon Film Resistor (1) (R14)
100 Ohms 1/4w Carbon Film Resistor (1) (R9)
Breakaway Unshrouded Headers 2.54 pitch Single Row
 (3 pin Vertical) (1) JP1
 (5 pin Vertical) (1) J6
 (5 pin Right Angle) (1) (J8)
 (6 pin Right Angle) (1) (J7)
151-8000-E Mini Jumper GF 6.0MM Black (2)
4840-6000-CP 40P Dual Wipe DIP Socket (1) (U1)
4828-6000-CP 28P Dual Wipe DIP Socket (2) (U2 & U6)
(U3, U4 and U5 are soldered directly to the pcb)

I have received notification that Atari apparently began their production line of the XF551 with the old 1050 power plug. It is different than the one I used for reference and so the power plug you salvage from your donor board may not fit my board. When their supply ran out they changed to a newer power plug footprint. If you find that you have the old 1050 power plug, at least on the current version of XF551 Mixed Parts Board, you will need to purchase this part # PJ-102AH.

A member from AtariAge who purchased my board has given the following fix if you can't afford the power plug.

*4607KX-101-472LF 4.7K Resistor Network SIP (1) (RN1)

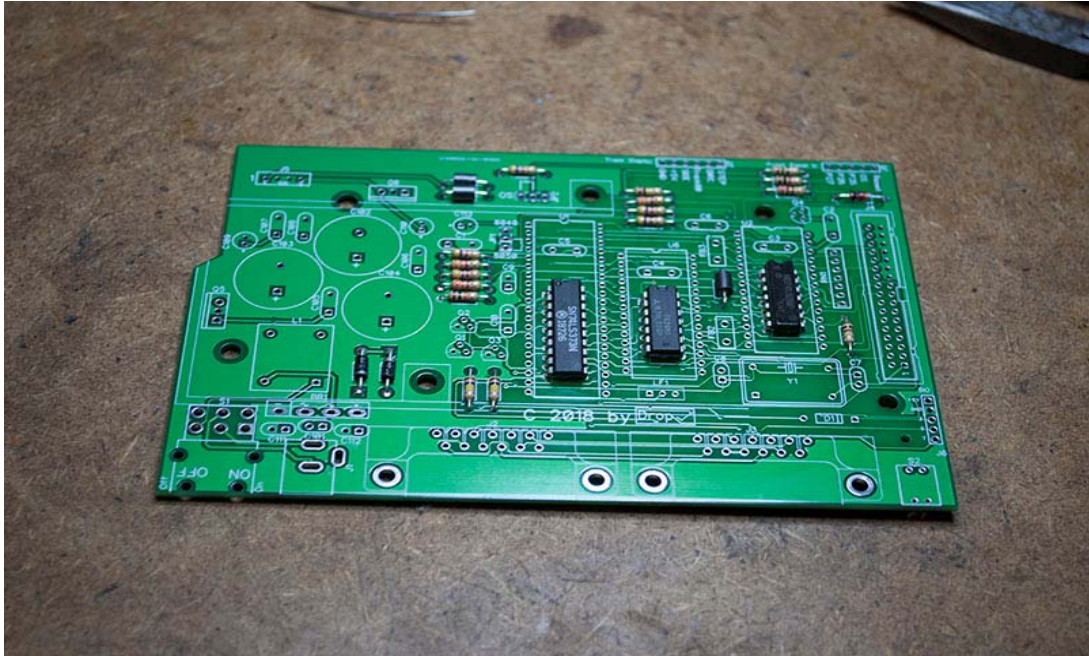


"I am attaching a picture of the modification I made to the power connector. You have to bend out the piece that would go through the solder hole, rotate the metal 180 degrees and then solder a piece of metal vertically to go through the hole. Inform your customers that they need to attach both voltage regulators, and the bridge rectifier to the heat sink, then attach the heat sink to the PCB, THEN solder in the regulators and rectifier. Otherwise there will likely be alignment problems and it is really difficult to get the screw into the hole for the rectifier because the power jack is in the way. "

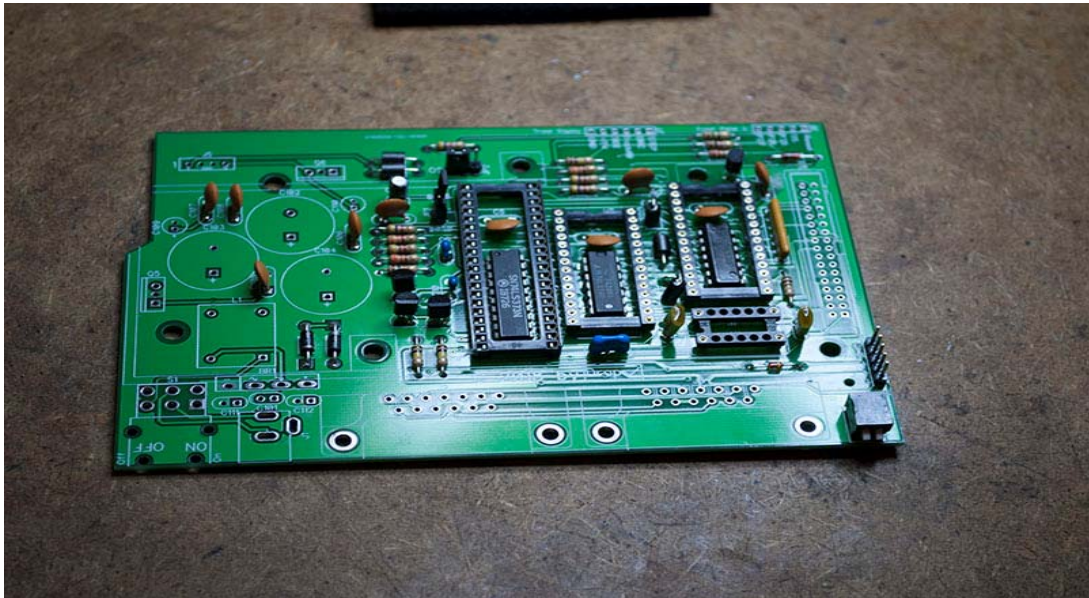
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Beginning:

General tips—Start with parts that are axial rather than radial. That will usually be the resistors, axial inductors and diodes. Then solder the glue chips into the board.

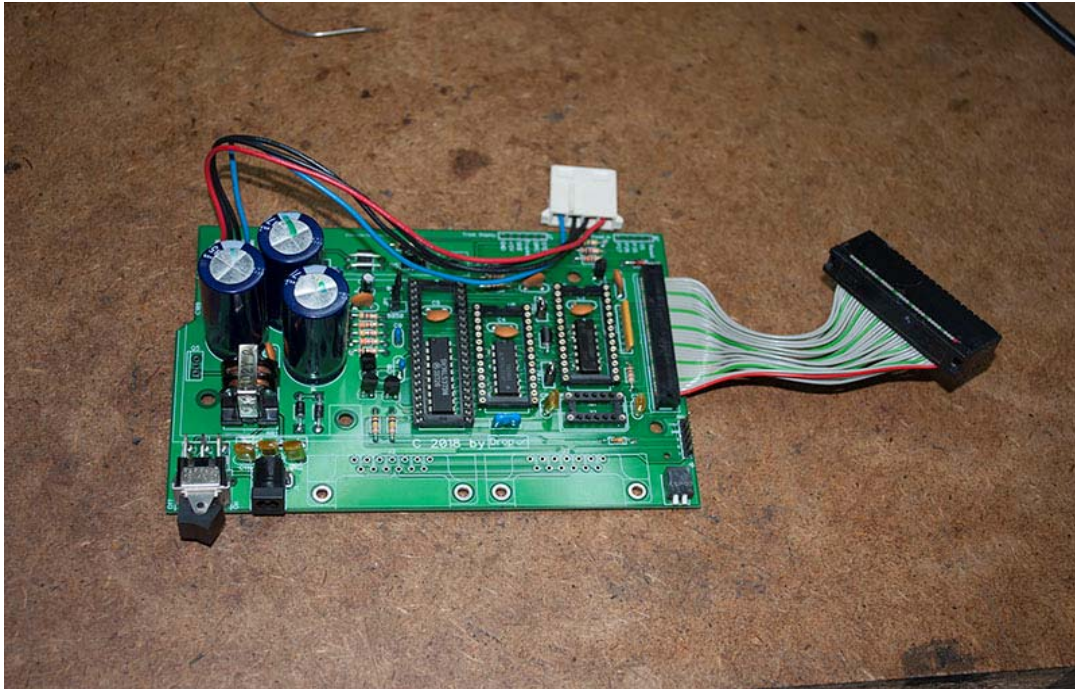


Then start building up.



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And then finally everything except the heat sink, BR1, Q5 and Q6.



Heat sink, BR1, Q5 and Q6 installation:

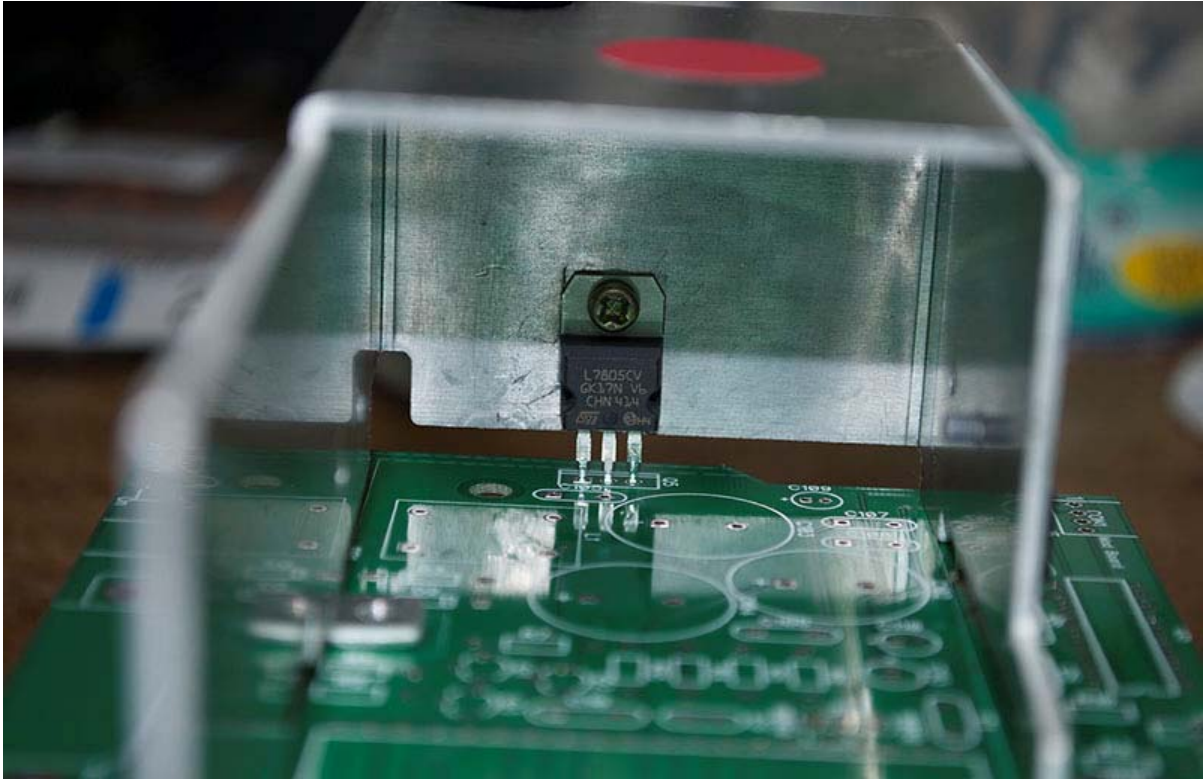
BR1 and Q6 are screwed into the outside of the heat sink and are easily then soldered into the board without much ado. However Q5 is a different story. It is screwed into the inside left hand side of the heat sink as you are looking at the back of the board. You don't have access to the screw holding it in place. That means you will need to screw BR1, Q5 and Q6 to the heat sink prior to seating it into place. Here are some pics to give you an idea of what you should see. I would do this at the very last, after every other part had been soldered in already. Once the heatsink is seated, then solder BR1, Q5 and Q6 into place.

This is a huge heat sink. It's purpose is to soak up the heat given off by the bridge rectifier and linear voltage regulators. It will resist mightily proper solder melt especially on the ground terminals. The trick is to apply enough, but not to much heat to form a good solder joint.

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