PET Companion Assembly Guide

If you are having the board created by your own PCB manufacture, here are the assembly instructions and parts list. To assemble the PET Companion kit, you will need the following tools.

- Soldering iron

- Solder – with lead works best

- Flux – If your solder doesn't have already inside

- Solder wick

- Small flat head screw driver

- Multimeter

- Ethyl Alcohol (rubbing alcohol) 90% or higher

- Well-lit area

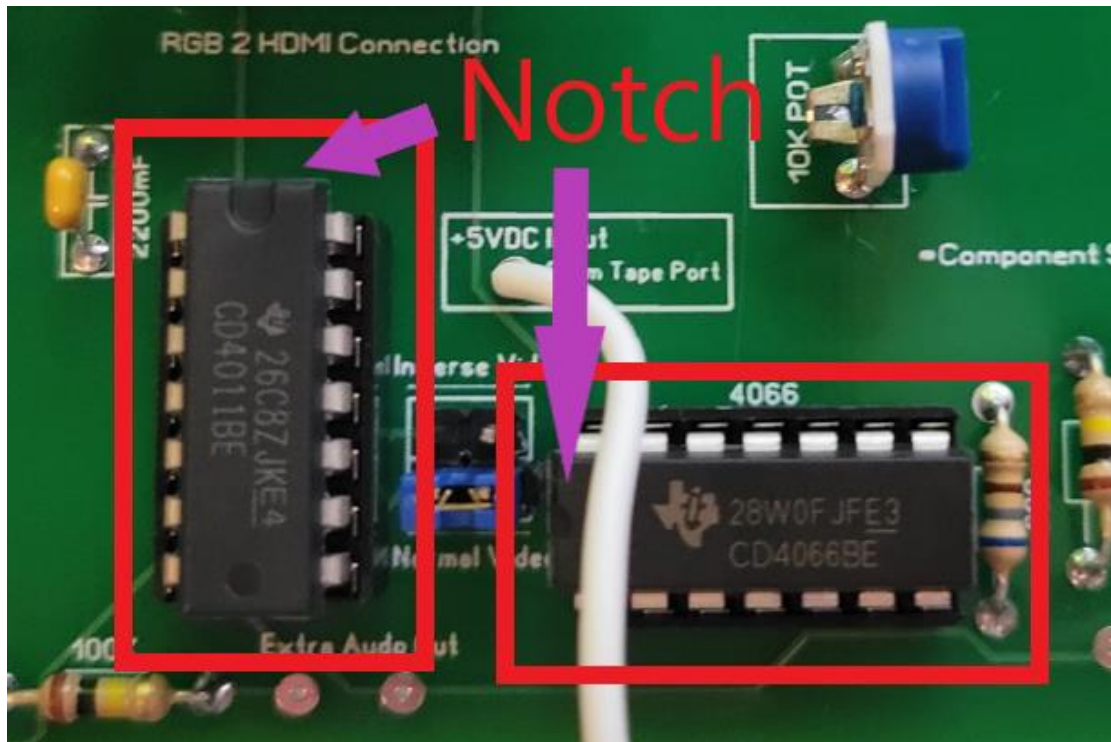| MANUFACTURER PART NUMBER	DESCRIPTION	Parts Vendor	Quantity
CD4011BE	IC GATE NAND 4CH 2-INP 14DIP	DigiKey	1
CD4066BE	IC QUAD BILATERAL SWITCH 14DIP	DigiKey	1
245-14-1-03	CONN IC DIP SOCKET 14POS TIN	DigiKey	2
3306K-1-103	TRIMMER 10K OHM 0.2W PC PIN SIDE	DigiKey	1
CF1/4CT52R332J	RES 3.3K OHM 5% 1/4W AXIAL	DigiKey	1
CF14JT680R	RES 680 OHM 5% 1/4W AXIAL	DigiKey	1
CF1/4CT52R104J	RES 100K OHM 5% 1/4W AXIAL	DigiKey	3
1N4007-G	DIODE GEN PURP 1KV 1A DO41	DigiKey	1
K222K15X7RH5UL2	CAP CER 2200PF 100V X7R RADIAL	DigiKey	1
	PET Companion Board	PCBGoGo	1
2x6 edge connector - female	All versions of PET Companion	AliExpress	1
2x24 edge connector - female	All versions of PET Companion	AliExpress	1
Adapter - no wires	All versions of PET Companion	AliExpress	1
3362M-103LF-ND	Potentiometers 9mm 10Kohms Single Cup	DigiKey	1
Mouser Part # 502-3517PCX	RCA Phono Connectors PHONO JACK R/A PCB	Mouser	1
	DB9 Female Connector Through hole	AliExpress	1

These are the recommended order for component installation.

1. Clean both sides of the board with Ethyl Alcohol 90% or higher. Wipe and clean all areas of the board for best results when soldering.
2. *Check to see which side of the board the components need to be install on.* The correct side has a picture of all the components on it. The back side, where no components are to be installed, has the pin out labeling for the RGB2HDMI connector. This step is critical as installing components in back side of the board will not work.

3. Install and solder the all resisters. (100k x 2, 680k and 3.3k).
4. Install and solder the diode (1N4007). Ensure the band on the diode face the same way as indicated on the board. Failure to do so will result in no video.
5. Install and solder the capacitor (2200pF) which is non-polar.
6. Install and solder the jumper blocks (2 x 2 pin headers). This is labeled Normal and Inverse video.
7. Install and solder the sockets (2x 14 pin sockets). Note the marking on the board for PIN 1.
8. Install and solder the potentiometer (10k POT).
9. Install and solder the Composite Out and Audio Out RCA jacks (RCA jacks).
10. Install and solder the DB9 male connector – RGB2HDMI port.
11. Install and solder the 2x24 pin female edge connector (User Port). Ensure the connector is on straight. Pre bending the leads in a hard surface will help keep the connector straight when soldering.
12. Install and solder the 2x6 pin female edge connector (Tape Port). Ensure the connector is on straight.
13. Place the jumper onto the 2 pins where the header is located. Place the jumper to "Normal Video" which the 2 lower pins beside each other. _Failure to place this jumper will result in no video._
14. Install and solder a wire that goes into the small board for the tape port (5VDC Input). This should be stranded wire 24-26 AWG. Length should be 5-6 inches or 12-15cm.
15. Install and solder the wire from step 11 to the main board (5VDC).
16. With your screw driver and multimeter, adjust the 10k POT to read 2.8k ohms. This is the best place to start. Once PET is powered up, you can adjust for best picture.

17. Insert the 4011 and 4066 ICs into the sockets. Note the direction of the notch of each IC and the socket.

18. Connect the board to the PET User Port and to the Tape Port.
19. Connect cables to composite out and to audio out
20. Connect cable to RGB2HDMI, if you have this unit. Not include\sold with this unit.
21. Power on external monitor and audio devices
22. Power on Commodore PET
23. Once install testing are complete, go over the board with Ethyl Alcohol 90% or higher and wipe and clean all areas.
24. Enjoy