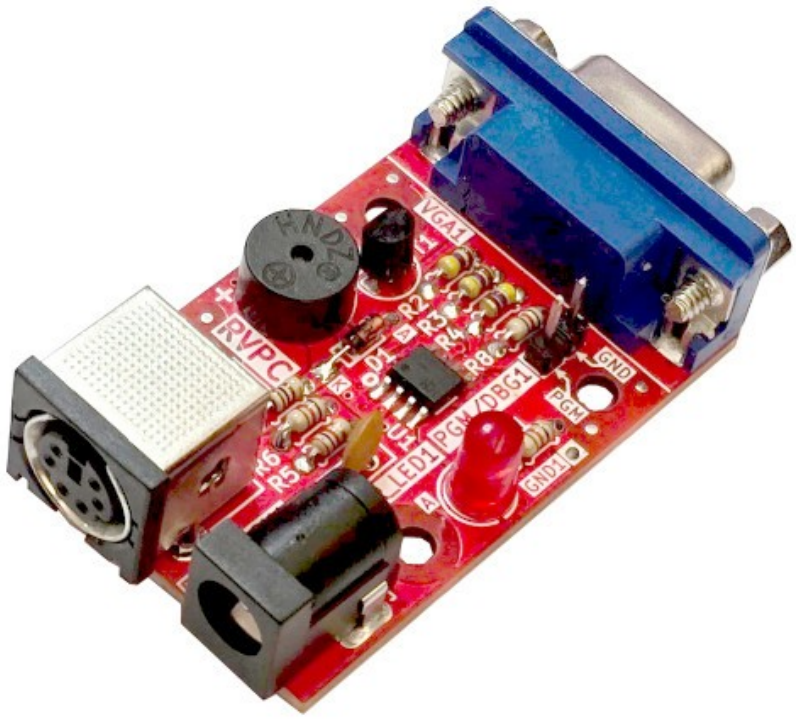


RVPC

RISC-V Retro computer assembly instruction

www.olimex.com

General tips for soldering:

1. Switch on the soldering iron, setup the working temperature to 350 C. Wait until the soldering iron reaches the temperature – there is a LED indicator which will pulse when the temperature is reached;

2. Before soldering, clean the soldering tip with wet sponge from the black residues;

3. Never touch the heated soldering tip or body with bare hands;

4. Be careful to not touch surrounding objects with the soldering iron heated body or tip (cables, table, cloths, etc);

5. Do not leave the soldering iron unattended;

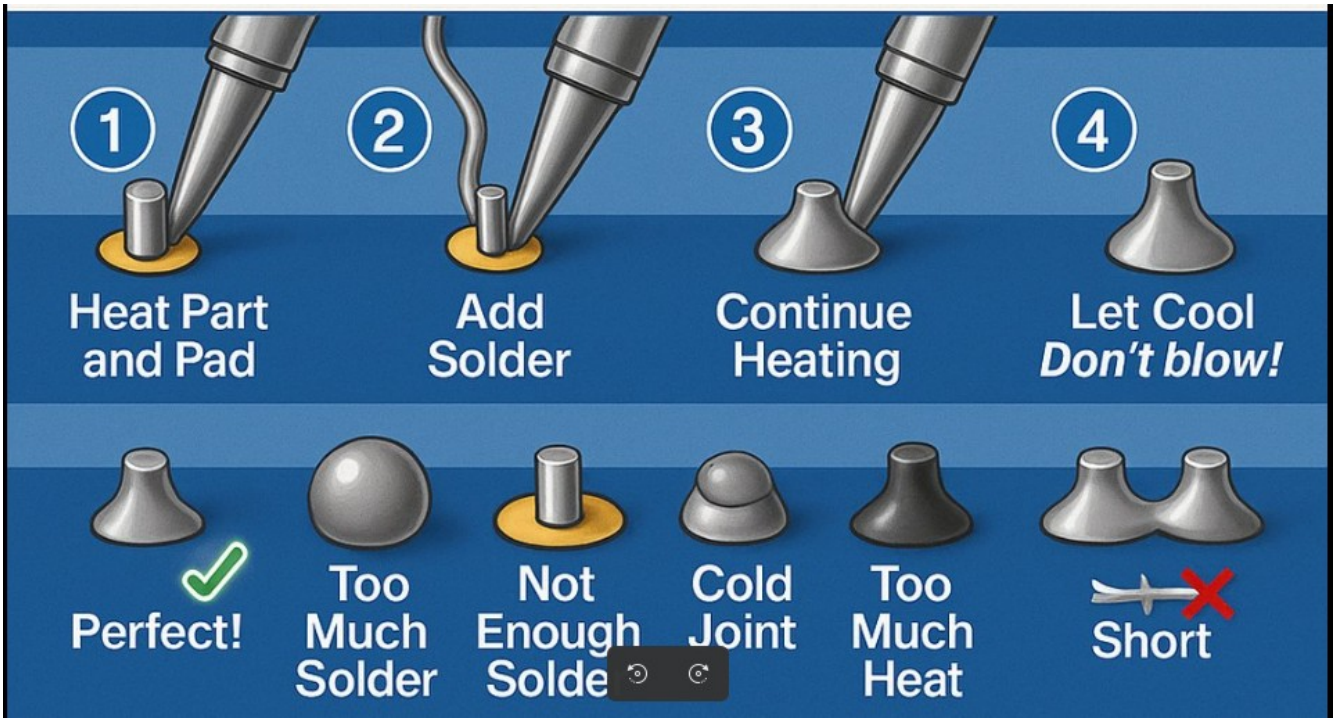
6. Place the electronic component on its place, watch out if there is polarity or orientation;

7. Touch the component pad with the soldering tip which you want to solder and wait 3-4 seconds to heat up;

8. Feed a little from the soldering wire between the soldering tip and the pad until the component lead is flooded with tin and it’s shinny and glossy;

9. If the soldering is not shinny but dull please re-solder with colophon.

How to solder sequence:



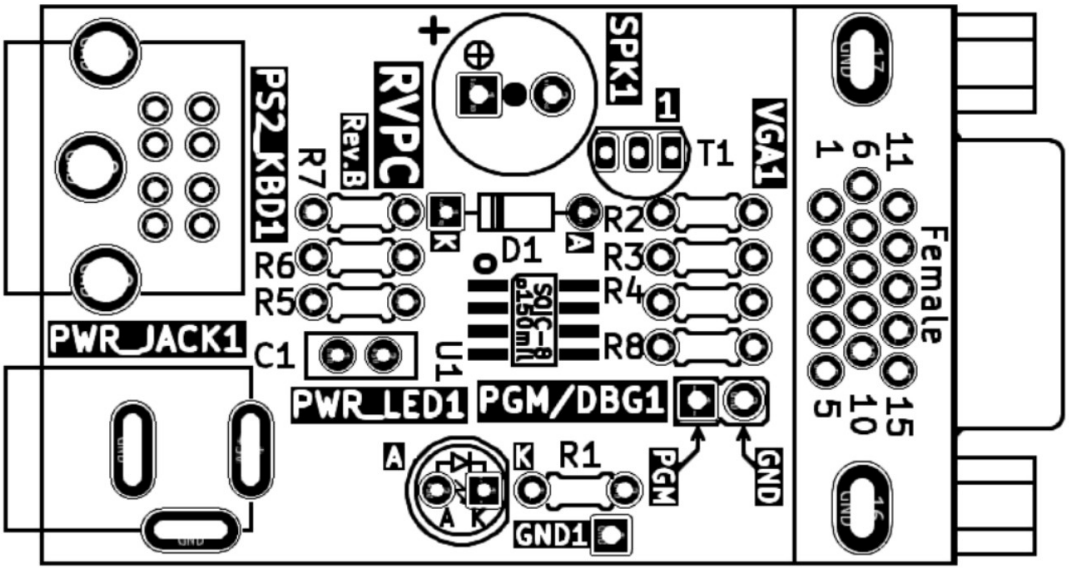
1. Touch the pad and component lead and hold for at least 3-4 second so they heat up

2. Add Solder wire slowly, until the pad is covered with solder

3. Remove the solder wire but keep heating for additional 1-2 seconds until the solder spreads inside the PCB padhole.

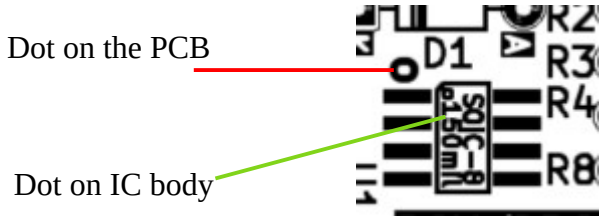
4. Remove the solder iron and wait few seconds to cool.

RPVC PCB layout:



Note that some components have polarity, meaning they must be assembled in a specific orientation and if they are rotated they will not work.

For instance U1 the processor is such component. It has dot mark on the IC body which show which is PIN.1 you must place U1 dot exactly matching the PCB dot mark



if you place and solder the IC with 180 degree rotation the board will not work

The components with polarity are: U1, D1, T1, PWR_LED1, SPKR please follow the instructions and do not place them at random orientation!

We recommend you to solder the components in this sequence.

Soldering Order	Quantity	Reference	Value	Comment
1	1	R7	100R/1/8W	BROWN-BLACK-BROWN
2	3	R2, R3, R4	470R/1/8W	YELLOW-PURPLE-BROWN
3	4	R1, R5, R6, R8	2k/1/8W	RED-BLACK-RED
4	1	D1	1N4148/DO35	The black stripe on the body to K
5	1	U1	CH32V003J4M6(SOP8)	DOT on IC body to point the PCB dot
6	1	C1	100nF/25V/2010	104
7	1	T1	2N3904	Follow the shape!
8	1	PWR_LED1	LED/PTH/5MM/RED	Put the short leg to square pad
9	1	SPK1	QMB-09B-03(1.5-5.0V_2.7kHz)	Follow + and – orientation
10	1	PGM/DBG1	HN1x2	2 pin header
11	1	PS2_KBD1	MDR6_MINI-DIN	PS2 connector
12	1	VGA1	HDR15-3.08-14.5T/VGA15	VGA connector
13	1	PWR_JACK1	PWRJ-2mm(YDJ-1134)	Power Jack

The VGA has three color lines: RED GREEN BLUE

The RVPC is monochrome and displays only one color, you can choose what color to be by connecting the small jumpers at the back of the PCB marked with colors.

If you want to have your computer in retro green color short just the GREEN jumper.

You can also make mix of colors if you solder more than one jumper. For instance blue + red will make purple or if you solder all three R+G+B you will have white color.