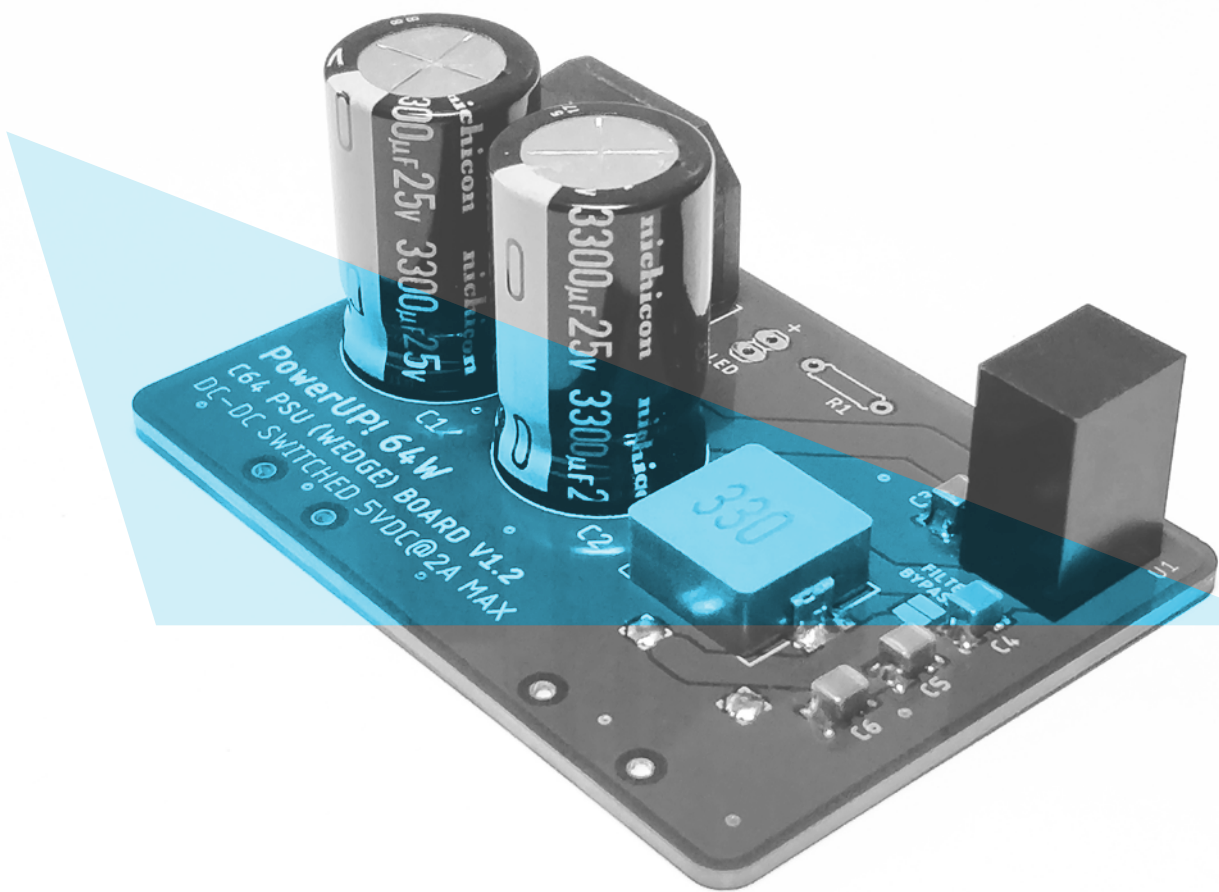


POWERUP!

PowerUP! 64W – VERSION 1.2



C64 PSU UPGRADE BOARD

USER MANUAL

POWERUP!

The **POWERUP! 64W** is a modern and safe upgrade for the voltage regulation boards in C64 PSUs. It replaces the original which is infamous for damaging the computer, when failing, due to overvoltage.

INSTALLATION

1. **Remove the PSU bottom plate** by first knocking with a hammer, using **moderate** force, at areas marked in blue (see ill. 1).

Secondly, insert the tip of a thin and broad flatheaded screwdriver in the gap between the plate and PSU housing and bend up the plate **gently**. Pull out the tip and move it a few centimeters and repeat. Repeat above procedures multiple turns until plate releases*.

*If the plate is still stuck after repeating the procedures above, insert the screwdriver in the gap flush to the plate and aim for the L-shaped support (see 1a) and increase bending force. Make sure to not use excessive force as it may damage/crack the plate.

2. **Disconnect the original board** when the plate is finally removed. First document the position of colored cables at **2b**. Then **desolder** (do NOT cut) the wires (see **2a** and **2b**) from the board.

Next step is desoldering the linear regulator or cutting its legs (see **2c**) under the PCB using a narrow cutter. Remove the board and trim the legs flush to the surface of the epoxy.

3. **Apply electrical tape** in the PSU between point **2d** and **2e**.
4. **Place the PowerUP! board in the PSU** and solder the wires to the pads. Verify colored wires position. Measure output voltage at **2b**.
5. **Reattach the bottom plate** using small dabs of super glue or tape.

Fuse(s) side

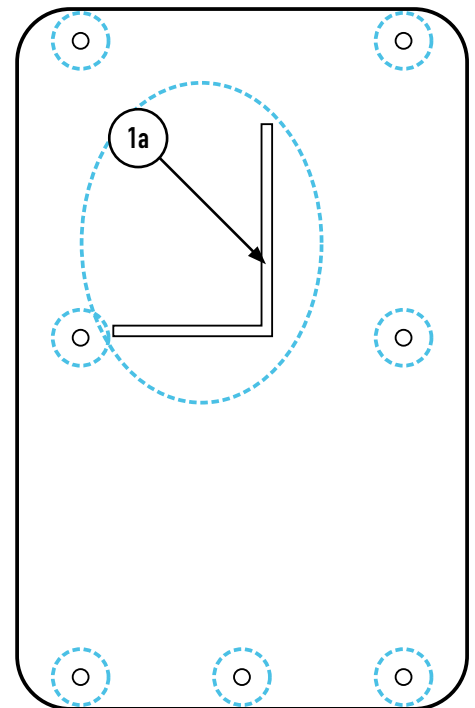


Illustration 1 - PSU bottom view

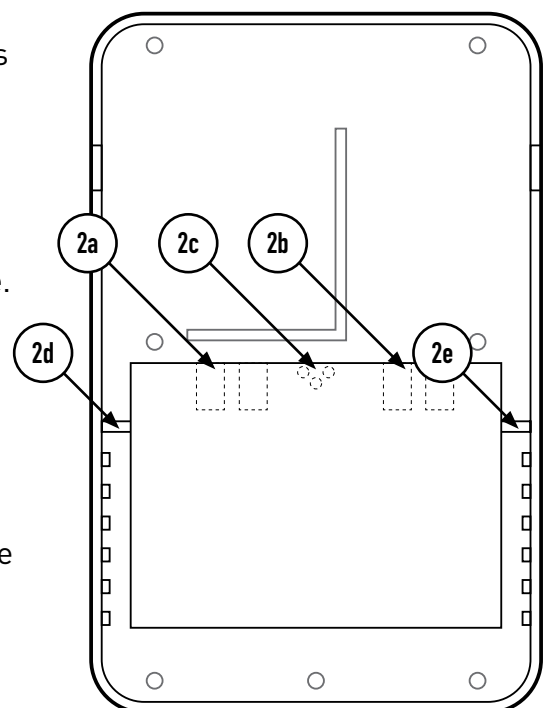


Illustration 2 - PSU interior bottom view

FEATURES

The PowerUP! 64W is a **drop-in replacement** and upgrade for the voltage regulating board found in the wedge shaped C64 PSUs. The original board converts 9 VAC to 5 VDC using a linear voltage regulator which releases a lot of heat and is also prone to deliver overvoltage when failing.

The replacement board utilises a **highly efficient switching DC-DC converter** with minimal heat release and which also has multiple protection features built-in. The output voltage is filtered by an inductor* and multiple capacitors to deliver clean power to your C64.

The board has an **option for external power LED**; solder a resistor** at R1 and add cables or pin header to solder pads marked 'LED' (5 VDC output) on the PCB **(3a)**.

* The filter inductor can be bypassed with solder bridge on the PCB **(3b)**.

** A 220 ohm resistor fits most LEDs. Increase the value to dim the light output.

SPECIFICATIONS

Supported PSUs	Commodore part no. 902503-06 and 902503-11 (see ill. 4)
Output voltage	4.95-5.05*** VDC (at 1 A)
Output current	2 A max (orig.: 1.5 A max)
Efficiency	~90% (orig.: <50%)
Protection	Overcurrent, overheating and short circuit protection
Dimensions	70×50×22mm (W×D×H)

IMPORTANT! *** Due to internal resistance in the computer and the power cable, there will be a slight voltage drop and the 5V line measured in the computer will be less than 5V. This can be partly compensated by closing the filter bypass solder bridge on the PSU board. This will increase the output voltage by 50mV per ampere.

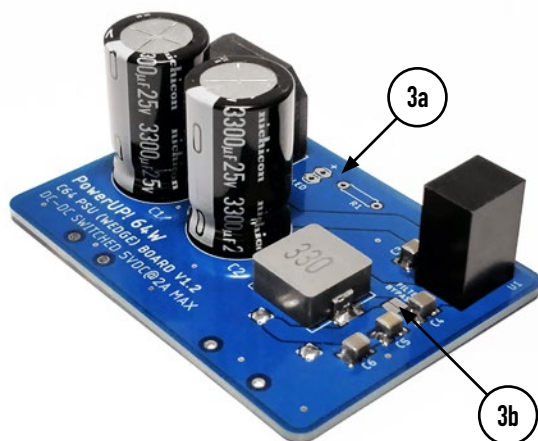


Illustration 3 - Board layout



Illustration 4 - Wedge shaped C64 PSU