Introduction

Thank you for purchasing the PC POWER SUPPLY CONTROLLER! This device will let you use a standard ATX style PC power supply with the FPGA Arcade Replay or any other device that might need a power supply controlled. Please read through this entire manual before you attempt the assembly, installation, and usage of this product.

Installation Requirements

The assembly PC POWER SUPPLY CONTROLLER is not difficult. However, if after reading through this manual you believe that you cannot perform the assembly or installation, please seek someone who can assist you. This manual should provide ample information and clarity to assemble, and use this product. You will need a small soldering iron and solder for assembly.

Warranty Information

This product carries a limited lifetime warranty. Units subject to improper installation, misuse, abuse, or modifications will not be covered under this warranty. We may at our discretion either repair or replace the unit covered under warranty. The customer will pay all freight charges to and from our facility. cbmstuff.com must be contacted to obtain a return authorization. Any product returned without authorization will be returned without repair or replacement.

Liability

By using this product, you agree to hold cbmstuff.com and Jim Drew free from any type of liability either directly or indirectly while using this product.
Legal Information

The ‘look and feel’ and functionality of this product are protected by U.S. copyright laws. Various terminology and feature names may be protected under U.S. trademark laws.

SECTION 1 – ASSEMBLY

(Skip to Section 2 if you purchased the assembled/tested version)

Step 1 – Inventory and identify the components

Remove the components from your kit. Refer to Figure 1. You should have received the following components:

- 1 Circuit board
- 1 – 470 ohm resistor
- 1 – 680 ohm resistor
- 1 – 4.7K resistor
- 1 – 47K ohm resistor
- 1 - .1uf capacitor
- 1 – 4 pin Molex connector
- 1 – 8 pin right angle header
- 1 – 24 pin right angle ATX connector
- 1 – Pre-programmed PIC12F629 IC

If you are missing any of these parts, please contact us immediately.
Step 1 – Installing the resistors

You must bend each end of the resistor leads 90 degrees to match Figure 2. This is necessary to fit the resistors in the circuit board.

The resistors have different bands of colors on them. This designates their value. Here is a list of the resistors and their colors:

R1 – 47K ohm (yellow, violet, orange, gold)
R2 – 680 ohms (green, gray, brown, gold)
R3 – 470 ohm (yellow, violet, brown, gold)
R4 – 4.7K ohms (yellow, violet, red, gold)

Refer to the diagrams for the resistor placement. Orientation of the resistor does not matter.
Insert the two leads from the 47K ohm resistor into the the two holes in the circuit board over the label “R1”. Refer to Figure 3 for details. Seat the resistor fully flush with the board.

Turn the circuit board over and solder the two resistor leads. Clip the leads flush with the solder joint as shown in Figure 4. Clipping the leads short before soldering will make soldering a bit easier.

Repeat the same procedure for installing and soldering resistors R2, R3, and R4. Figure 5 shows what all of the resistors installed should look like. Double-check the color bands to make sure the resistors are in their correct locations.
Figure 3 – Resistor inserted into the circuit board
Figure 4 – Resistor soldered and leads cut flush
Figure 5 – All resistors inserted, soldered, and leads cut flush
Step 2 – Installing and soldering the PIC12F629 IC

Position the PIC12F629 CPU over the circuit board as shown in Figure 6. Note the location of the notch (the half-moon shaped indent located at one end of the chip). There is a matching 'notch' pattern shown on the circuit board for the part labeled as "IC1".

Figure 6 – Orienting the PIC12F629 IC
Now, keeping the same orientation, insert the 8 pins of the PIC12F629 IC into the holes in the circuit board.

If the pins are difficult to get in on both sides, you can slightly bend the pins inwards.

Seat the PIC12F629 IC fully flush with the circuit board as shown in figure 7. Turn the circuit board over and solder the pins.

Figure 7 – PIC12F629 in the circuit board
**Step 3 – Installing the capacitor**

The capacitor has no orientation requirement. Insert the two leads from the capacitor into the two holes in the circuit board next to the label “C1”. Press the capacitor flush with the circuit board as shown in Figure 8.

![Figure 8 – Capacitor inserted into the circuit board](image)

Turn the circuit board over and solder the two capacitor leads. Sometimes it helps to cut the leads shorter before soldering, making it easier for a soldering iron tip to reach the circuit board pads. Do not cut the leads shorter than 1/8” above the board, just to make sure the leads are not cut too short! Once the leads have been soldered, clip leads flush with the solder joint.
Step 4 – Installing the 8 pin header

Insert the 8 pin right angle header into the board as shown in Figure 9. Turn the circuit board over and solder the pins. Make sure the connector stays flat and does not tip when soldering.

Figure 9 – 8 pin right angle header inserted into circuit board
Step 5 – Installing the power connectors

First, insert the 24 pin right angle ATX connector into the board. Make sure that the connector is flush to the surface and parallel to the board as shown in Figure 10. Turn the circuit board over and solder all of the pins.

The final connector to install and solder is the 4 pin Molex connector. This connector must be inserted into the board with the bevel edges towards the center of the board. It is VERY important that you double-check this! Refer to Figure 11. Once you have the connector inserted correctly, turn the circuit board over and solder the pins. This completes the assembly. See Figures 12 and 13 to make sure your assembled board looks the same.

Figure 10 – Position 8 pin header towards text on board
Figure 11 – 4 pin Molex connector inserted into circuit board
Figure 12 – Completed assembly – top view
Figure 13 – Completed assembly – bottom view
SECTION 2 – INSTALLATION

Make sure that your PC power supply is unplugged from the AC source.

Plug the ATX power connector from the PC power supply into the PC POWER SUPPLY CONTROLLER board. The plug is polarized, so it is not possible to insert the plug upside-down.

Now, plug the switches and LEDs you want to use into the correct locations. Note, the purpose of each set of two pins is labeled on the board. The 4 pin Molex connector is available for powering a device that needs 12v/5v at up to 1A of current. If you need more current, use one of the Molex connectors that is connected to the power supply.

Plug in the AC power to your PC power supply.

SECTION 3 – USAGE

Using the PC POWER SUPPLY CONTROLLER is really simple! You just press and hold the POWER switch (connected to the PWR_SW location) for 2 seconds to turn on the unit. To turn the unit off, press and hold the POWER switch again for 3 seconds.

Pressing the RESET switch (connected to the RESET_SW location) will 'reset' the system by turning the power off for 2 seconds, and then back on.

The POWER LED (connected to the PWR_LED location) will light up when the power supply is ON. The RESET LED (connected to the HDD_LED location) will light up during a reset condition.

If you do not have, or do not want to use a RESET switch, you can program the board so that the POWER switch can also be used as a reset switch. In this mode, pressing the POWER switch briefly will cause a reset. Pressing and holding the POWER switch still turns the power supply on or off.

To program the board so that POWER switch is also a reset (or normal), do the following:
Make sure the power supply is ON (the POWER LED is lit). Now, press and hold the POWER and RESET switches at the same time. Keep holding both switches until the LEDs turn off. Now, releasing both switches will cause the LEDs to blink either once or twice, followed by one second of pause and the LED rapidly flashing. One flash means that POWER switch is strictly for power on/off and the RESET switch is used as the reset. Two flashes means that the POWER switch is also the reset. Each time you repeat this procedure it will toggle between one and two flashes.

The default programming is one flash (POWER switch is strictly power on/off).