

Atari8Warez SIO2PC-USB Kit Assembly Instructions

Tools Needed:

- A rotary tool with grinding stone and drill attachments
- Small screwdriver (*Phillips or Flat depending on the screw type of the SIO plug*)
- Wire cutter
- Wire stripper
- Soldering Iron, solder and flux
- Isopropyl Alcohol to clean flux residue

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1. You will need an SIO cable with screwed type SIO plugs, like the one in Figure 1 below.
Cut one end of the SIO Cable close to the cable exit hole.



Figure 1

2. Unscrew and separate the two pieces of the SIO plug shell exposing the innards.
Separate the plug section from the shell and remove the remaining cable sheath piece.

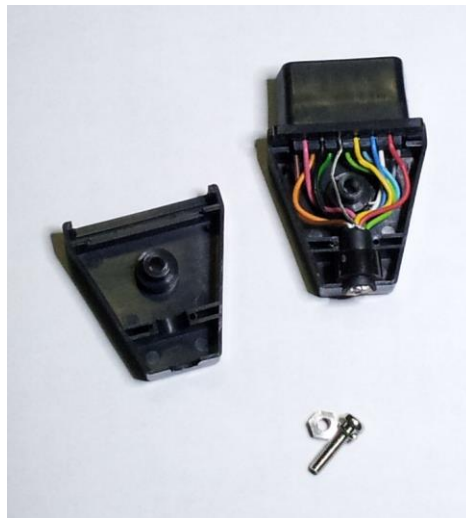


Figure 2

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3. Separate the pin holding section of the plug from the plug and remove all SIO pins and wires except for 3, 4, 5 and 7, and dispose them off. Cut the remaining wires down to 20mm length. Excess wire length may later cause fitting problems. The colors of the wires of your SIO cable may be different from the ones illustrated in Figure 3, so don't go by color reference, examine Figure 3 and go by wire positions instead. You may want to mark the wires or take note of their colors to remember which wire is which. Strip all wire ends with a wire stripper about 2mm long. With your soldering iron tin all wire ends.

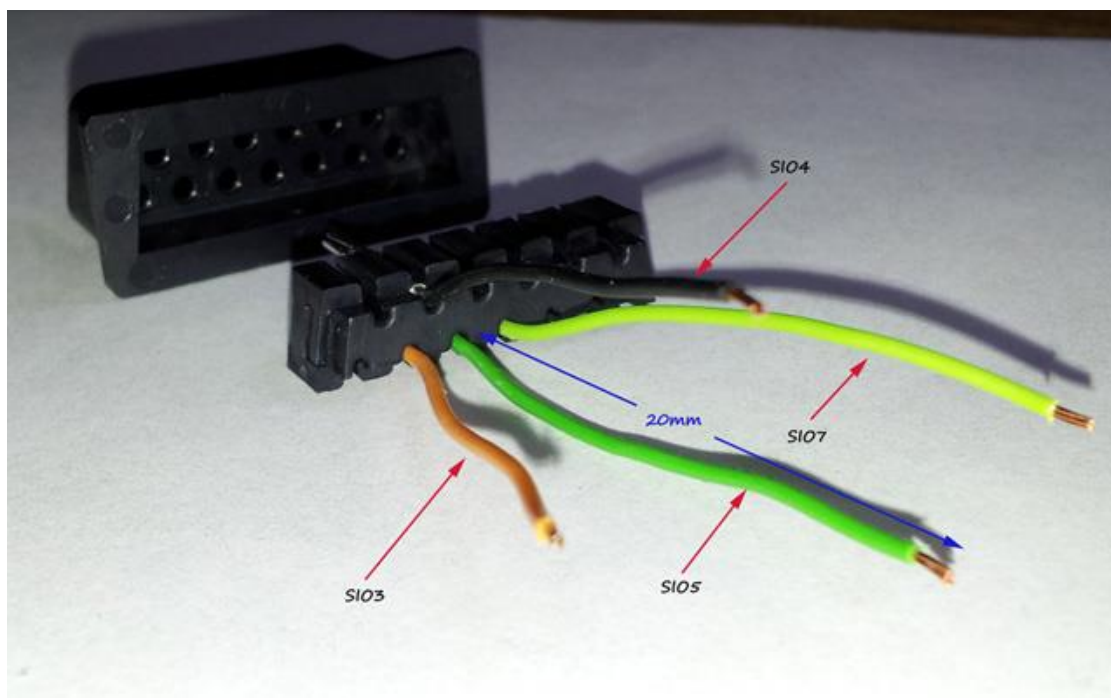


Figure 3

4. SIO pads are marked with small numbers on the PCB; you may need a magnifier to clearly see the numbering next to each pad. Pads are already pre-tinned for your convenience, so you don't need to apply extra solder. Solder all wire ends to the appropriate SIO pads on the PCB (Figure 4). Make sure the wire ends remain within pad boundaries and don't make contact with other parts on the PCB. Also make sure to clean the flux residue after you finish soldering. Once the soldering is done re-insert the pin holding piece of the plug back into the plug case.

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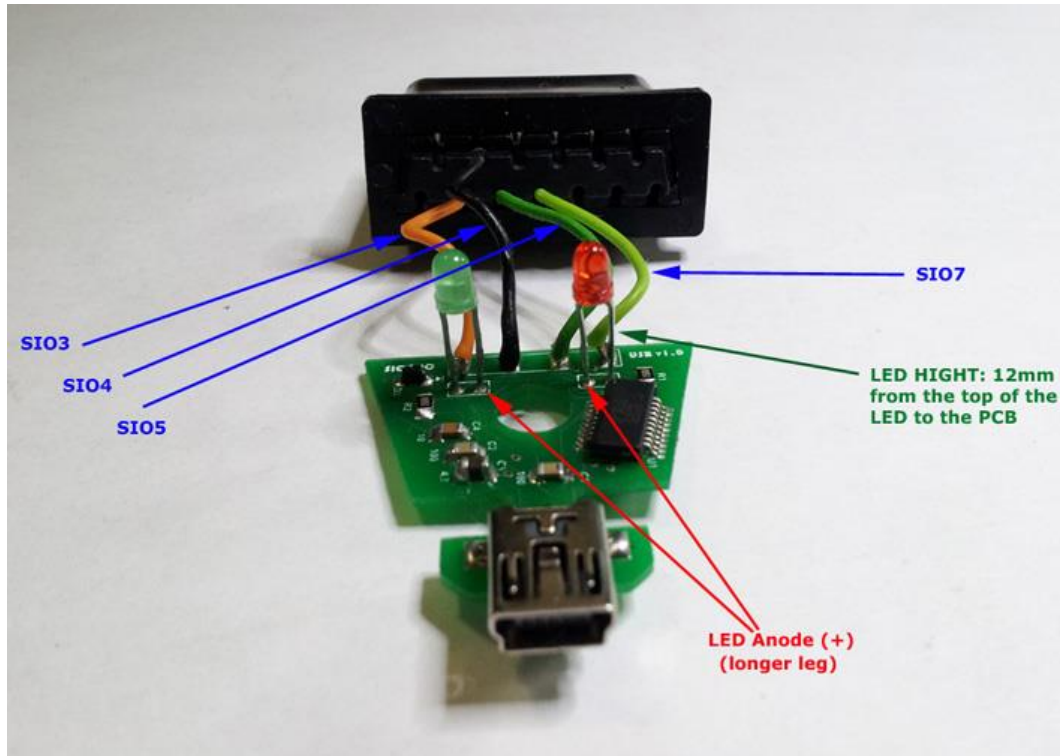


Figure 4

5. If you want to install the LEDs keep reading, otherwise skip to Step 7 below. Make sure you insert the LEDs into their PCB holes paying attention to their polarity. LEDs will not function if not installed the right way. Check Figure 4 for correct positioning of the LEDs. The longer leg of the LED is the anode or positive, and the shorter one is the cathode or negative. Solder the LEDs by inserting their legs into the LED holes on the PCB. The height of the LED from the PCB to the top of the LED lens must be exactly 12mm for a proper shell fit. Solder the LED legs from the bottom side of the PCB. Use enough solder to fill the led holes and have a solid assembly. Cut the excess wire from the legs after soldering using a small wire cutter, so that they don't interfere with the shell fitment. Clean any flux residue left on the PCB and on the solder points.

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- Now, you need to drill LED holes to the one of the shell halves. Examine Figure 5 for correct position and dimension of LED holes.



Figure 5

- The cable exit-hole diameter of the plug must be at least 9mm for the USB connector end of the PCB to fit properly. Some SIO plugs have the necessary clearance, some are smaller. If yours is smaller, you'll need to enlarge the hole. The best way to do this is by using a rotary tool and



Figure 6

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a cone shaped grinding stone attachment like this one. It is best to screw the two halves of the shell together before grinding, so that the pieces don't separate or shift during the procedure. After grinding, you may use a precision knife to trim the burr from the edges of the hole.



Figure 7

8. Now it is time to fit the PCB into the plug. After you insert the PCB and the plug into the bottom half of the SIO shell (*the one without the LED holes on it*), make sure the SIO wires don't interfere with the screw hole and that the USB plug end fits into the cable exit-hole properly. If the hole isn't large enough the upper half of the shell won't fit.

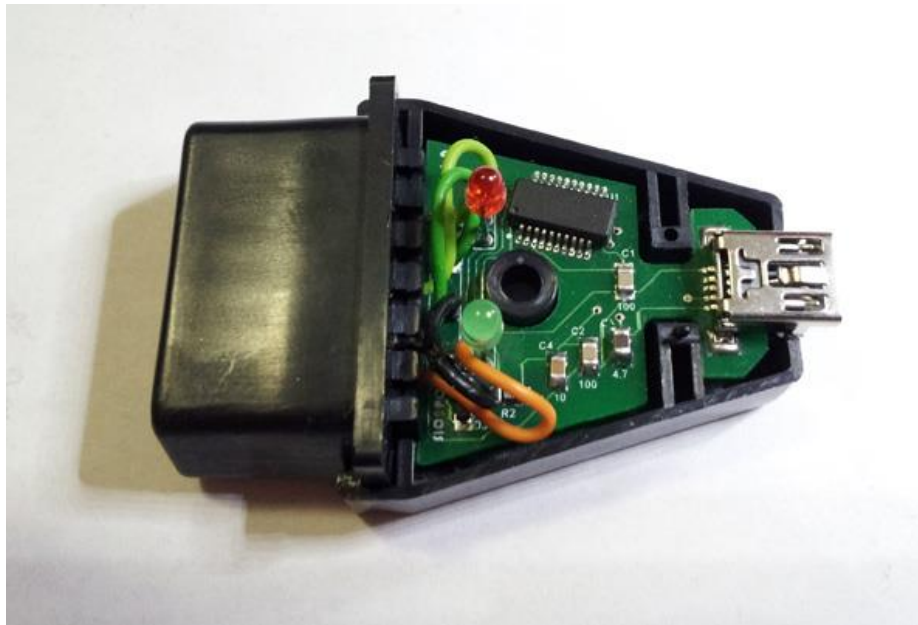


Figure 8

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9. You're now almost done. Take the upper half of the SIO plug shell and align LED holes with the LED tops and close the shell. Insert the shell screw and the nut into their holes and tighten it. You should end up with a finish like in Figure 9



Figure 9