D1 Mini Dev Assembly Instructions

Before starting, ensure you have all the components and tools required for assembly. A soldering iron, solder, a set of fine needle-nose pliers, and a PCB holder or vise will be needed.

Note: This assembly process involves advanced techniques including surface mount soldering. It is not recommended for beginners. If you're new to soldering or electronics assembly, consider seeking assistance from a more experienced individual or exploring some simpler projects to build your skills.

Remember: Your D1MiniDev DIY kit may not require all components listed in the Bill of Materials, as your configuration will vary based on your specific needs and preferences. Always review your setup and verify the components you need before beginning assembly.

Step 1: Gather Your Materials

Ensure you have all components specified in the Bill of Materials. Lay them out on a clean, well-lit workspace. Familiarize yourself with the components and their corresponding locations on the PCB (Printed Circuit Board).

Step 2: Power Supply Capacitors & Fuse - For 12V Power Supply Only

It's generally easiest to start soldering the smallest components first and work up to the larger ones. Start with the power supply filtering capacitors and PTC Resettable Fuse if they are included in your configuration.

- **C1 & C2**: Power Supply Filtering Capacitors (x2): Locate the appropriate pads on the PCB for the capacitors and solder them in place. These components are not polarized.
    a. Note these components are strictly optional and are not needed with most power supplies. If you wish to omit them from your build simple do nothing with these pads.
- **F1:** PTC Resettable Fuse: Identify the correct location for the fuse on the PCB. The fuse is non-polar, so it can be placed in either orientation.
    a. Note the fuse is optional if using a 12V power supply with short circuit protection. In the event you wish not to use the fuse simply use a small piece of wire to cross the contacts of F1.

Step 3: Solder the DC-DC Converter

- **PS1:** If your configuration includes the DC-DC converter, find its corresponding pads on the PCB. The converter should be inserted from the bottom of the board and match up with the footprint. Solder into place and trim any excess leads if necessary.

Step 4: Install the Momentary Push Buttons

- **S2 & S4:** Locate the correct locations for the momentary push buttons on the PCB, if they are part of your configuration. Ensure they are oriented correctly and securely fastened before soldering. After insertion, flip the PCB over and solder them into place.

Step 5: Install the Molex Connectors and Power Input

- **J1, J2 & J4:** Next, install the Molex Minifit connectors and the power input, if they are included in your setup. Ensure the orientation of these components is correct before soldering them in place.

Step 6: Solder the RGB LED

- **LED1:** Identify the correct location for the RGB LED on the PCB if it's part of your setup. Note the orientation before placement, aligning the notch or dot on the LED with the symbol on the PCB.

Step 7: Install the D1 Mini and MAX6675 Module

- **MAX6675:** If using the K-Type thermocouple you can install the MAX6675 module. If the module came equipped with a right-angle header you will need to desolder this header and replace it with a vertical pin header.
- **D1MINI:** For the D1 Mini, ensure that the USB port is facing the edge of the board. Make sure the D1 Mini is oriented per the documentation.
    - Please note the **silkscreen on version 1.0 of the board is not accurate**.

Remember to take your time while soldering to avoid overheating any components. Apply the soldering iron to the junction of the component lead and the pad, then apply solder to the junction, not directly to the iron.

After you've completed soldering all components, give your board a visual inspection. Look for any loose components, excess solder, or bridges between pads.

Congratulations, your D1MiniDev is now assembled and ready for use! Refer back to the installation instructions and Home Assistant setup to get your D1MiniDev up and running.

Important: This guide assumes knowledge of surface mount device (SMD) soldering techniques. SMD components can be very small and may require a precision soldering iron and fine solder. Experience with soldering is strongly recommended before attempting to assemble this DIY kit. If you're not confident in your soldering skills, consider seeking help from someone with experience.

Remember: practice safety when working with electronic devices and always follow local and national electrical codes. Enjoy your new DIY D1MiniDev!