

## Remote Power Kit Assembly Tips and Hints

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#### **Tools Required**

1. 25 Watt temperature controlled soldering iron with fine tip
2. Soldering iron sponge (wet).
3. Magnifier (recommended)
4. 7.5-12V DC power source to mate with PJ-102 connector, centre positive.

#### **Soldering Tips**

Place the iron on the pin or pad of the component, then melt solder onto it to hold the component in place. Remove the solder then the iron. DO NOT apply solder to the iron and use it as a 'butter knife', as that will result in dry joints. Verify connections with the volt ohm meter.

#### **First Step:** Populate the two power Kit PCB's

- Insert the RJ45 jacks (4) into both boards and solder them in place.
- Add the resistor and LED, ensuring the correct polarity (flat end to edge of board)
- Add the Power jacks to both boards, solder all parts in place.

#### **Second Step:** Add the power jack and regulator to the node.

- Populate the 78L33 regulator at the left side of the node PCB. Ensure to solder the tab to the board for good heat conduction.
- Populate the last power jack on the node PCB, next to the regulator.

#### **Third Step:** Connect it all together.

- Fabricate a small cable to go between the two power plugs. Any cable will do, polarity is not important, but ensure that the center pins are connected together and so are the shields, and there are no shorts between them.
- Fabricate an ethernet cable of the desired length, or a pre-built one can be used.
- Designate one power injector to be the local end, and the other the remote end. Connect the power injectors together with the ethernet cable, using the POE+ETH jacks.
- Connect a 6-9V power source to the local end and ensure both LED's light up. If not, check the polarity of the power source. Remove the power.
- Connect the power jack of the remote injector to the power jack on the node using the cable fabricated previously.
- Reconnect the power supply and the Pi should power up. To use the ethernet remotely, connect a cable from the 'ETH' jack at the remote end to the Pi, and at the local end to your LAN.

**WARNING: Do not touch the regulator on the PI HAT, as it can get hot. It will run without a heatsink, adding one is a good extra precaution.**