

Build document for

# FREQUENCY CENTRAL ROUTEMASTER

Power supply / bus board



- Routemaster is a simple to build combined power supply and busboard.
- It can be powered from a 12VAC wallwart, or alternatively a 12VAC centre-tapped transformer.
- Options are included for Euro, MOTM, or Dotcom power headers.
- The supply is adjustable for +/-12V or +/-15V using multi-turn trimmers
- There is an onboard 5V supply too.

### IMPORTANT

**6 pin MTA-156 silk screen is the wrong way around on Rev2 PCBs. If in doubt, use a DMM to check orientation.**

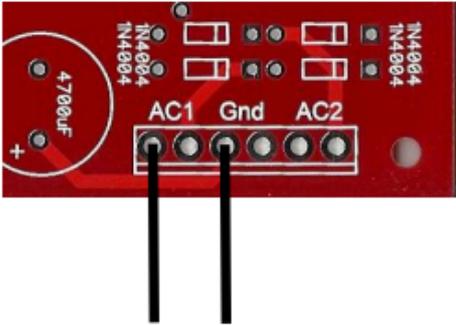
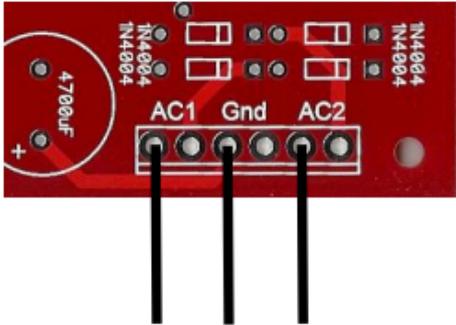
**Build guide** - It's best to populate the PCB in height order, smallest first.

1. Install and solder all resistors.
2. Install and solder all 1n4004 diodes. Ensure correct Polarity
3. Install and solder 100nF capacitors.
4. Install and solder all three LEDs. Follow the diagram on the PCB to ensure correct polarity.
5. Install and solder 78L05. This part is not indicated on the PCB, it's right next to the +15/12V LED. Ensure correct polarity.
6. Install and solder 10uF and 100uF capacitors. Ensure correct polarity.
7. Install and solder 2K multi-turn trimmers.
8. Install all power headers.
9. Bolt LM317 and LM337 to their heatsinks, install and solder. I find it best to solder the middle pin first, which ensures against solder bridges.
10. Install and solder all 4700uF capacitors. Ensure correct polarity.

## Hooking it up to 12Vac

Routemaster can be powered from a 12VAC wallwart, or a 12VAC centre-tapped transformer. I would always recommend going the wallwart route unless you are confident with dealing with mains voltages.

Routemaster's AC input section has 6 pads, **AC1 (x2)**, **Gnd (x2)**, **AC2 (x2)**. If you wish, you can use a 6 way MTA-156 to connect to your chosen AC source. Alternatively, the extra holes can be used for strain reduction of your cables.

12VAC wallwart	12VAC transformer
	
<p>Just use <b>AC1</b> and <b>Gnd</b>, ignore <b>AC2</b>.</p>	<p>Take one winding to <b>AC1</b>, centre tap to <b>Gnd</b>, one winding to <b>AC2</b>.</p>

Attach one wire to each of the outer tabs on the circular barrel connector – leave the middle pin empty.

Connect the other end of the red wire to the 'AC1' hole on the PCB. Connect the black wire to Gnd

