

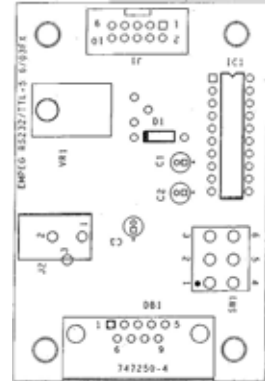
Before continuing, make sure that you have everything necessary:

» **Parts:**

- PCB Board
- Component Bag, containing:
 - MAX233CPP [IC1]
 - IC-Socket [IC1s]
 - DPDT Switch [SW1]
 - 10-pos Header [J1]
 - Power Jack [J2]
 - DB9 Connector [DB1]
 - 1 μ F Cap [C1]
 - .1 μ F Cap [C2]
 - .33 μ F Cap [C3]
 - 1N4001 Diode [D1]
 - +5V Voltage Reg. [VR1]
- Instruction Sheet
- VFD Display (Optional)
- 10-pos Ribbon Cable (Optional)

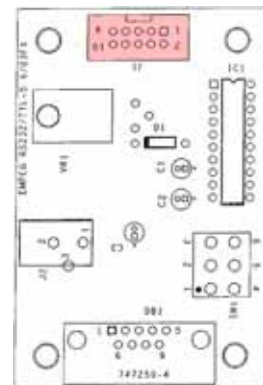
» **Tools Needed:**

- Solder Iron
- Solder
- Tweezers
- Multimeter/Voltmeter (Testing)



Step #1:

Take the 10 position header (or alternate .100" spacing, 2-row header) and solder it to the PCB, making sure that the open, center tag is pointed to the **outside** of the PCB. If using an alternate header, make sure that pin 1 is aligned correctly. (pins #9 and #10 need to remain shorted.)

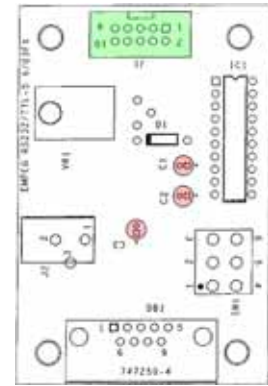


Step #2:

Take the three capacitors, and solder them into place:

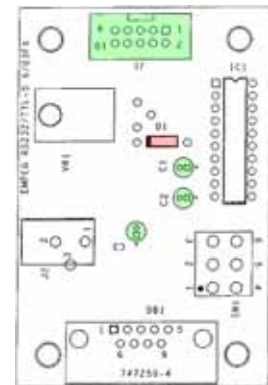
- » The cap that is marked with a “1 uf” should be soldered into position C1.
- » The cap marked “.1 uf” should be soldered into position C2.
- » The cap marked “.33 uf” goes into position marked C3.

The capacitors have one lead marked with a white-printed bar on the casing. This printed bar is the “+” terminal. Insert the capacitors onto the PCB with this marked lead next to the “+” printed on the board.



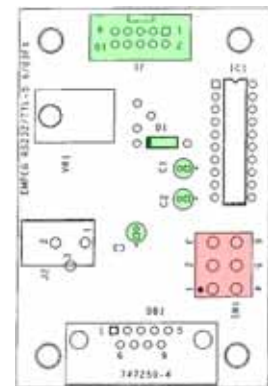
Step #3:

Take the diode and solder it into place. Make sure that the white bar on the diode matches the direction of the screened image on the PCB.



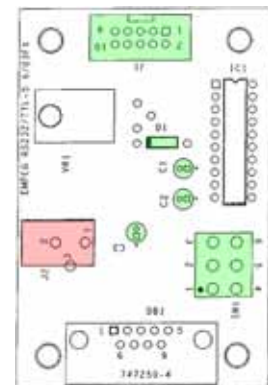
Step #4:

Take the red switch and solder it into the board. Direction of the switch does not matter.



Step #5:

Solder in the black power connector. This is for an external power supply for using the VFD on the Empeg when it's not mount in it's sled. If you wish, you can bypass this part and solder in a jumper wire from pin #2 (closest to the edge of the PCB) to pin #3, (center pin, offset to the left.)

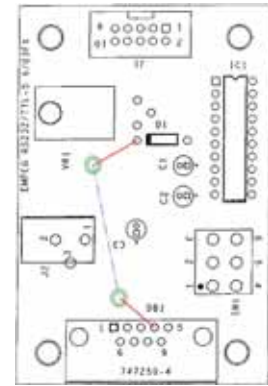


Test #1:

This is the first test that you should perform, to verify that the power jack (J2) is operating correctly. Put the multimeter in Ohms (Ω) mode, or in "Continuity Test". Use one lead and touch it to pin #4 of the DB connector (DB1). With the power jack soldered in, and nothing plugged into it, connect the other lead up to the top pin of D1. (The top pin being the pin closest to the white bar on the diode.)

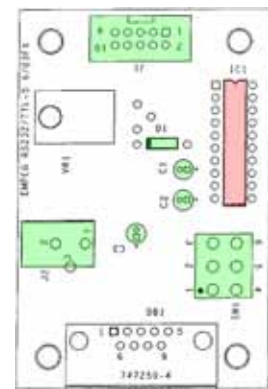
The blue line indicates the multimeter. The green circles/red lines are the leads and where they connect to.

When connected, you should get a reading of at or very near 0 (zero) ohms.



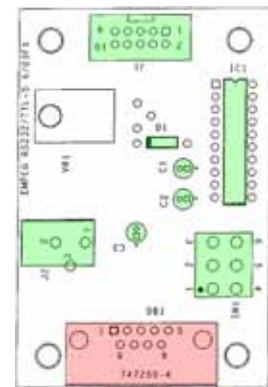
Step #6:

Leaving the chip in its bag, find the IC socket. Insert and solder it to the PCB, making sure that the end of the socket that has the cut-out notch in it is at the same side as pin #1. (The square solder pin.)



Step #7:

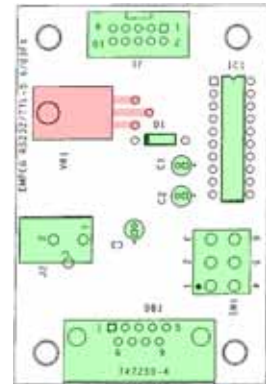
Take and solder in the DB9 connector. If desired, you can get two small machine screws and nuts and physically hold down the DB9 connector for added support.



Step #8:

Insert the VR1 into the holes on the PCB, making sure that the top of the regulator is facing the IC socket. Push in and then bend it back. This may have to be repeated a few times to get the mounting hole aligned to the hole on the PCB.

While this aligning isn't necessary, if you decide at this point, or some time in the future, that you'd like to install a heatsink (Digikey P/N: HS115-ND), you can without having to re-solder the leads.



Test #2:

Step #9:

There **is no** Step #9. You're done! If the test above succeeded, you're ready to install the IC chip (making sure that the white dot/cutout on the chip is aligned with the notch in the IC socket), hook your VFD display up, and start figuring out how to mount it in your vehicle.

