

DIY Yaesu Mic Adapter

Contents

- Description 2
- Conclusion..... 5
- Appendix 1 – Bill of Material..... 6
- Appendix 2 - Sources..... 7

- Figure 1 Yaesu Mic Adapter 2
- Figure 2 FT-450D Mic Connector 3
- Figure 3 MD5320 Mic Adapter Schematic 4
- Figure 4 MD5320 Mic Adapter PCB Layout..... 5

Description



Figure 1 Yaesu Mic Adapter

This document describes the hardware details of a DIY (Do It Yourself) Yaesu Mic Adapter. This adapter will work with either electret or dynamic microphones equipped with 3.5mm audio plugs, and an external PTT switch equipped with the same type of 3.5mm audio plug. This unit has been tested with the Yaesu FT-450D and FT-991A, although it should work with most Yaesu rigs that use the 8-pin RJ-45 connector for the microphone.

Let's look at that 8-pin connector. Figure 2 shows the connections used by the FT-450D microphone connector.

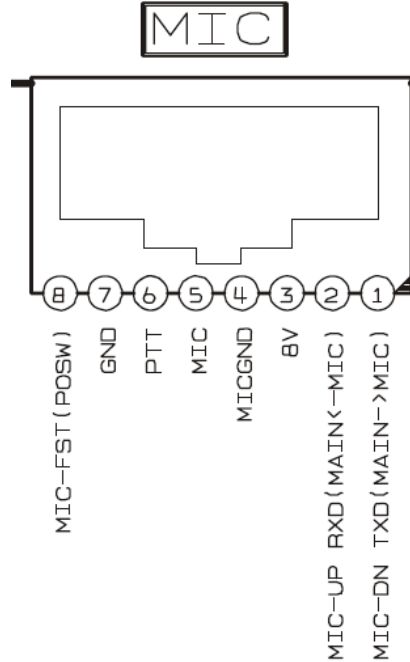
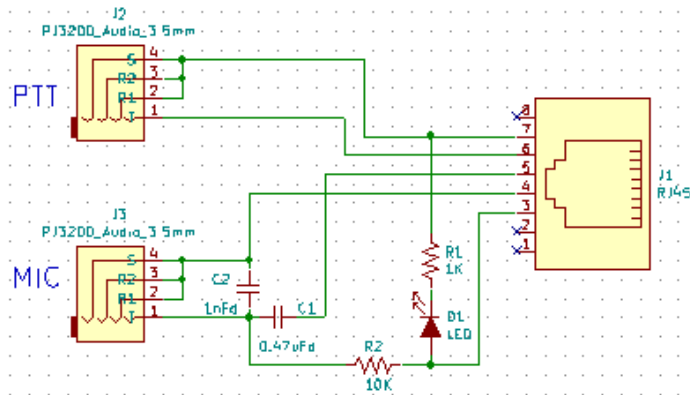


Figure 2 FT-450D Mic Connector

Now if we look at the schematic for the mic adapter (Figure 3), you will note that we use the 8V output from the rig to power up an LED, but more importantly to provide parasitic power to a condenser microphone if that is used. If a dynamic mic is used, **do not install R2 and C2 and short out C1**. The LED and R1 can be left unequipped at your discretion since the LED serves no function other than to indicate that the connection is receiving power from the rig.

The connectors I used in the design were of the 3.5mm TRRS variety since they were very commonly available as surface mount devices. The 2 R (ring) connections are not used and are tied to S (Sleeve).



For use with a Dynamic Mic, Short out C1 and do not install R2 and C2.

Figure 3 MD5320 Mic Adapter Schematic

The PCB for this project is shown in Figure 4, and the relevant Gerber files are available via the links at the end of this document. Figure 4 also contains all important dimensions. If you are building this from the PCB, assemble the SMD devices first. I highly recommend using Cyanoacrylate (Krazy Glue®) to hold down the connectors J2 and J3 before soldering. This will give them a strong mechanical connection to the PCB and will help prevent issues when inserting/withdrawing connectors to them.

Also, a 3D printed case is available for the project. The STL file for printing your own is available via the links at the end of the document.

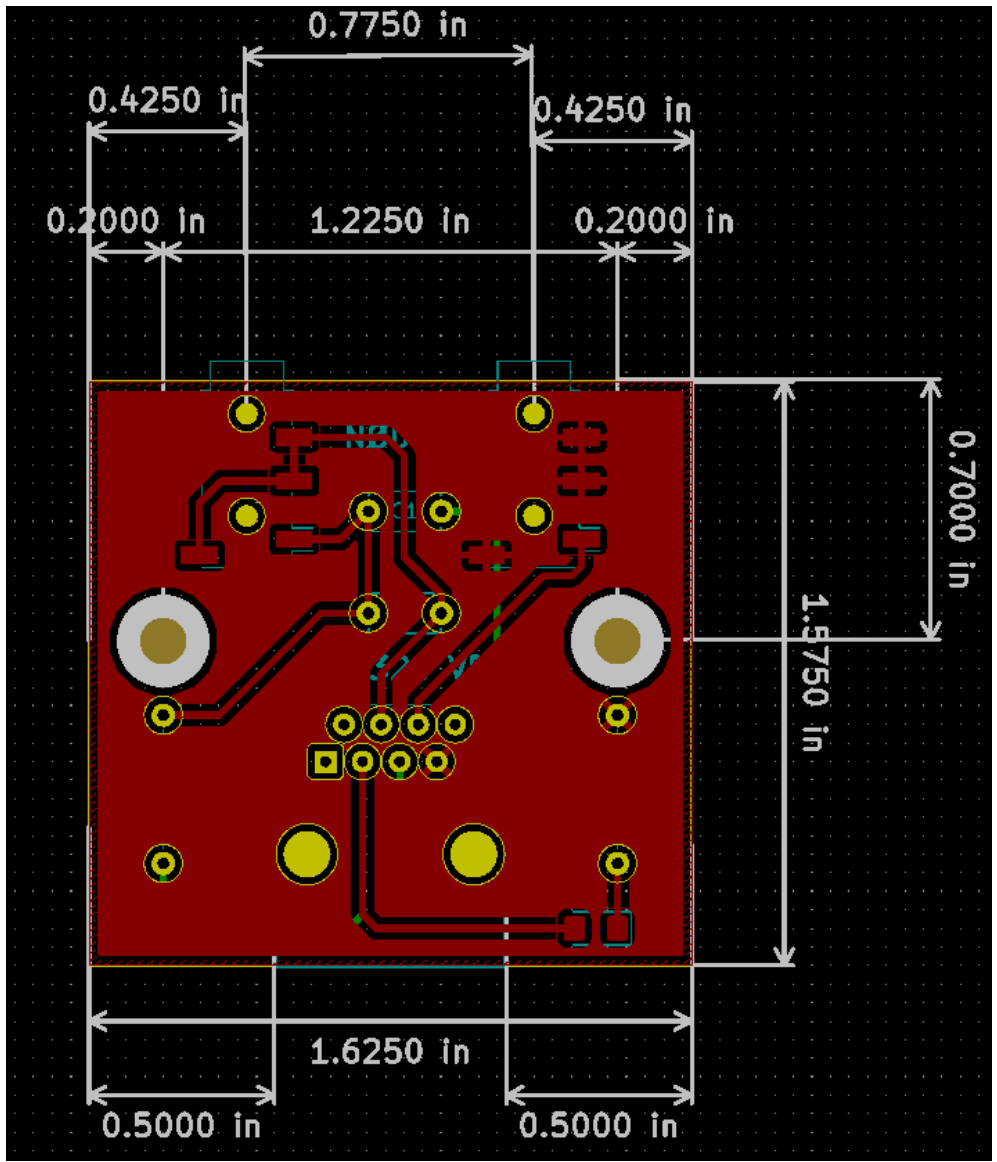


Figure 4 MD5320 Mic Adapter PCB Layout

Conclusion

I hope that this project has given you some ideas to work on a similar project of your own.

73

Mitch NØDIM

Appendix 1 – Bill of Material

Designator	Quantity	Description	Potential Sources
C1	1	0.47 uFd capacitor	Jameco.com #25558
C2	1	0.001 uFd capacitor	Jameco.com #15190
R1	1	1K ohm ¼ resistor through-hole	Jameco.com #690865
R2	1	10K ohm ¼ resistor through-hole	Jameco.com #691104
D1	1	Red LED 1206 package	AliExpress, eBay
J1	1	8 Pin RJ-45 PCB mount connector	Jameco.com #958286
J2, J3	2	PJ320D audio connector	Amazon, eBay

Appendix 2 - Sources

1. PCB Gerbers for this project:
<http://n0dim.com/Documents/MD5320%20FT450D%20Mic%20Adapter%20Gerbers.zip>
2. PCB manufacturers: <https://jlcpcb.com/> and <https://oshpark.com/>
3. STL files for the 3d printed project case:
<http://n0dim.com/Documents/MD5320%20Mic%20Adapter%20STL.zip>