

# EMDRC

## Hands-Free Adapter Kit

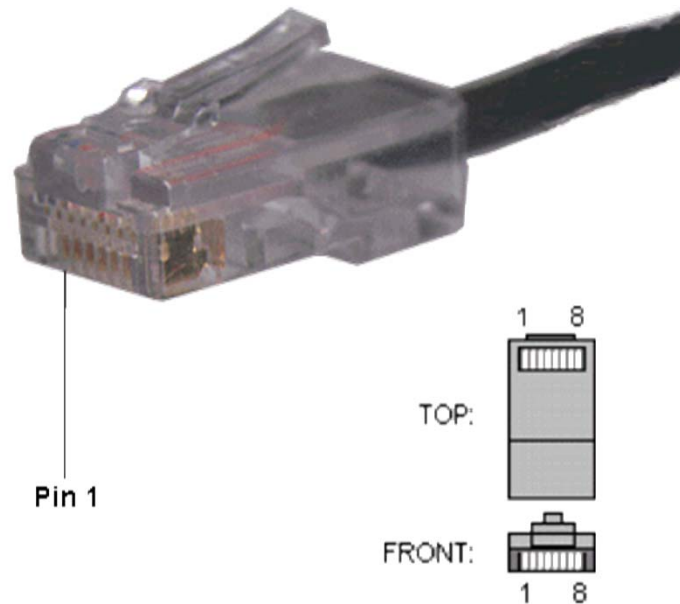
### Jumper Header wiring to suit common amateur radio types (v2.0)

**PLEASE NOTE:** It is the responsibility of the constructor to provide the wiring between the radio's microphone circuit and the Hands-Free Adapter's RJ45 modular connector, and (optionally) between the Hands-Free Adapter and the regular hand held microphone. This guide is intended to provide general advice about common manufacturers microphone wiring conventions and some suggested jumpering. IT IS IMPORTANT THAT THE CONSTRUCTOR VERIFY THE WIRING FOR HIS/HER SPECIFIC RADIO MODEL AS SOME TRANCEIVERS MAY PROVIDE DIFFERENT WIRING FROM THOSE CONTAINED IN THIS DOCUMENT. **FAILURE TO TAKE SUFFICIENT CARE IN THIS MAY RESULT IN DAMAGE TO THE RADIO TRANSCIEVER AND/OR THE HANDS FREE ADAPTER. THE EMDRC ACCEPTS NO RESPONSIBILITY FOR ANY ERROR'S OR PROBLEMS THAT MAY RESULT FROM USING THE INFORMATION CONTAINED HEREIN.**



# Hands-Free Adapter Kit

## RJ45 Connector Pin Numbering

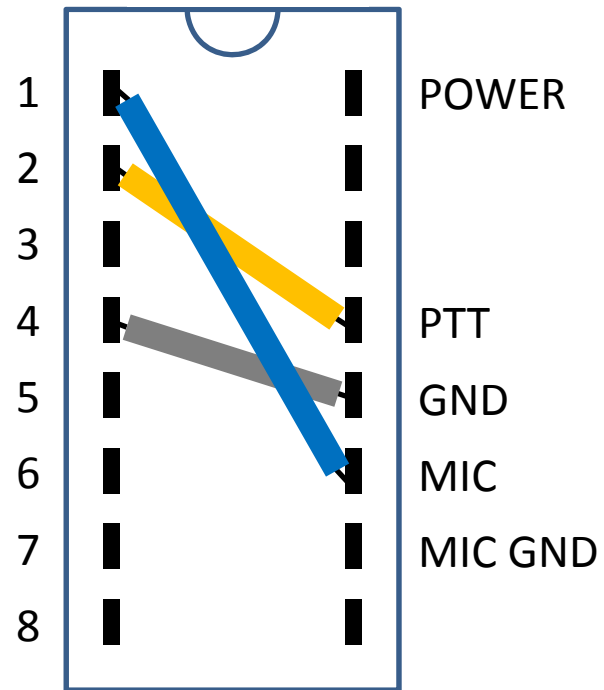


**Pin 1 is the Left Hand Side, when viewing the PLUG from the front as shown above.**

Please note that the numbering convention (Pins 1 to 8) used by the Hands-Free Adapter Kit's "Jumper Header" is based on this above convention, also used throughout the computer industry and by ICOM.

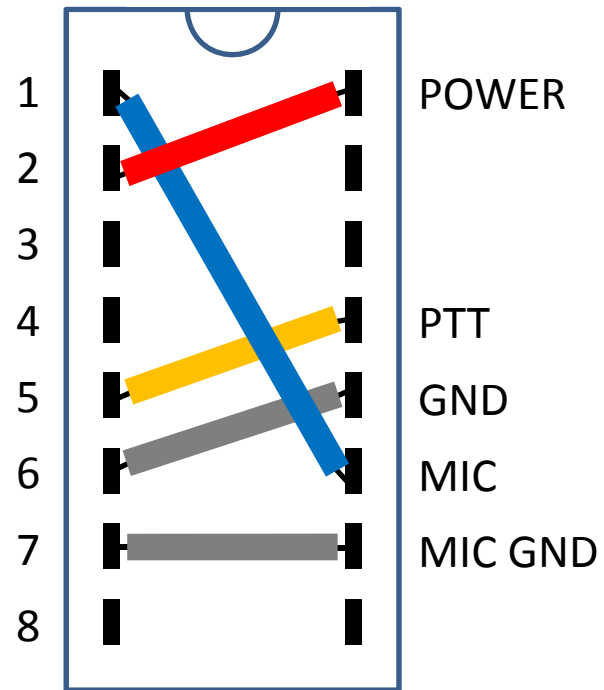
Be aware that Kenwood, Yaesu and Alinco have all chosen to number their RJ45 connector pins in the reverse order.

### ICOM 4-pin Round



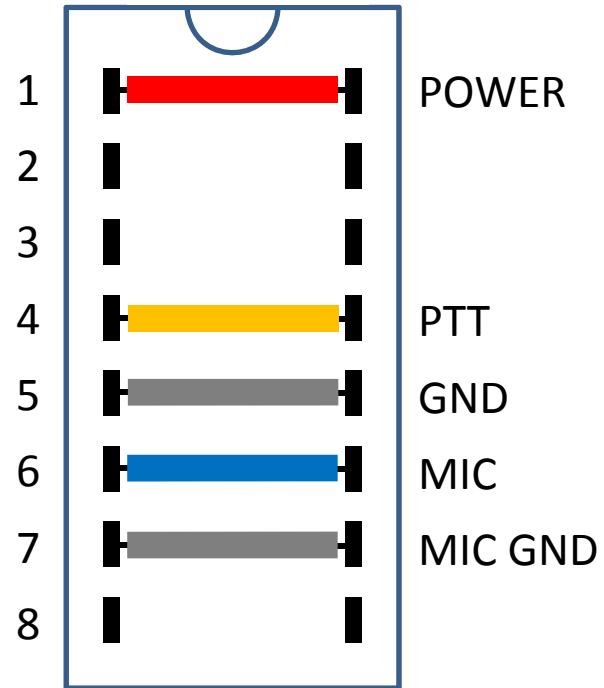
This requires an adapting cable to be constructed that connects the Hands-Free RJ45 8-pin modular connector to the radio's 4-pin round connector

### ICOM 8-pin Round

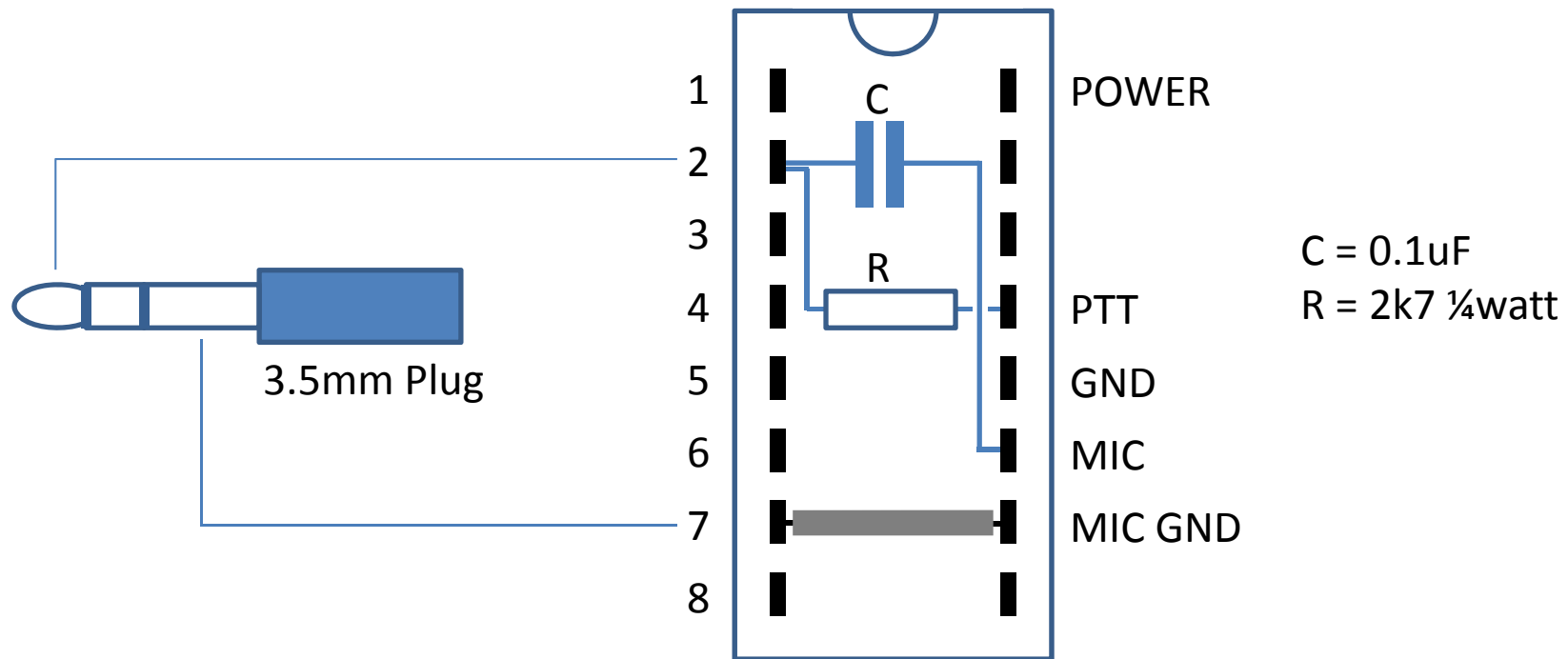


This requires an adapting cable to be constructed that connects the Hands Free RJ45 8-pin modular connector to the radio's 8-pin round connector

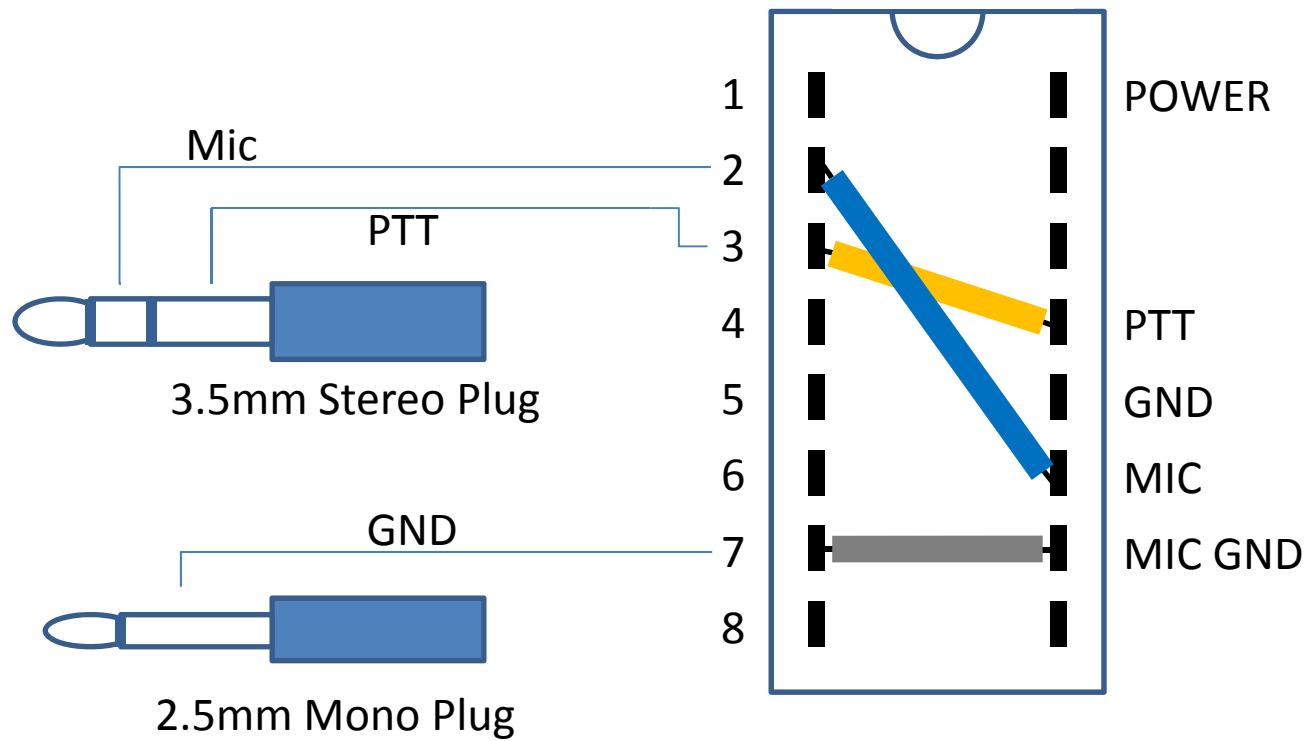
### ICOM RJ45



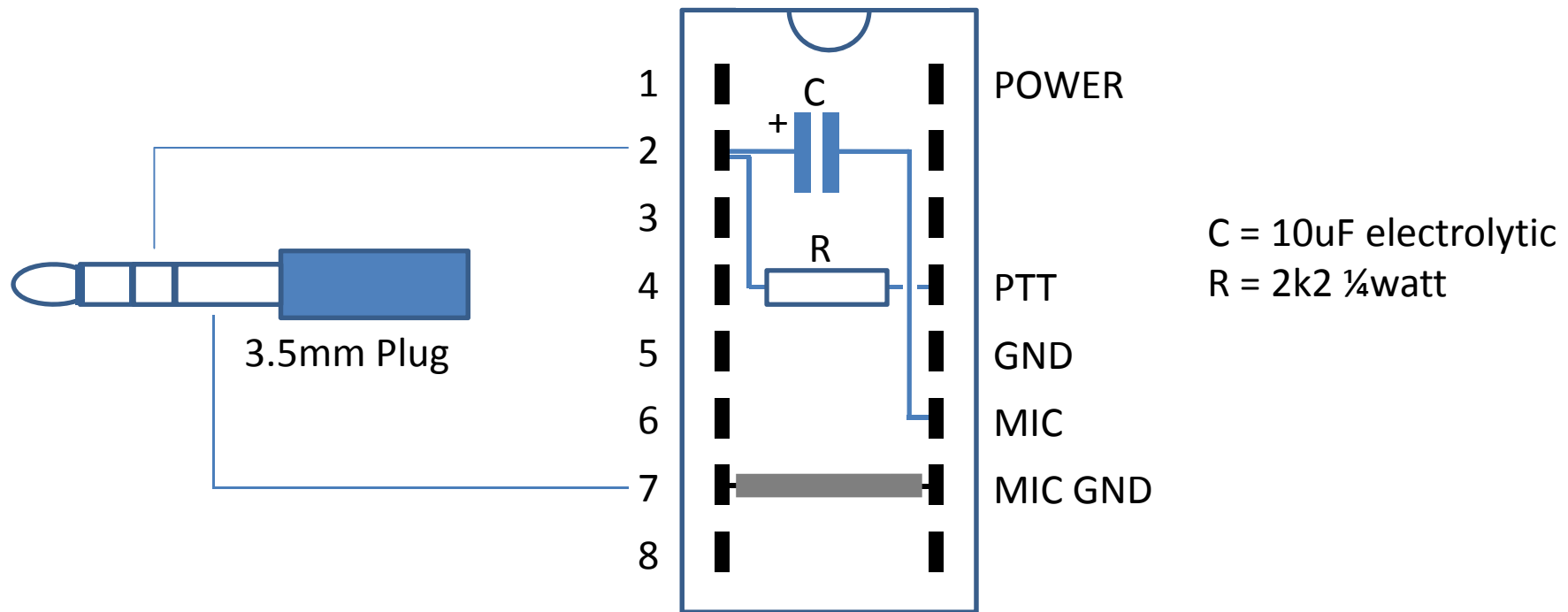
Handheld Radios, with shared PTT & Mic pins  
(most brands except Kenwood)



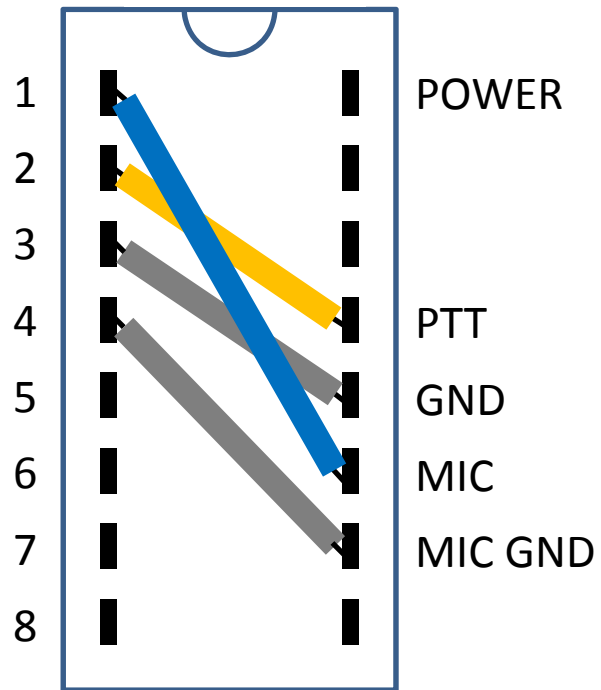
Handheld Radios, with separate PTT & Mic pins  
(eg Kenwoods)



# Yaesu VX series Handheld Radios, with shared PTT & Mic pins

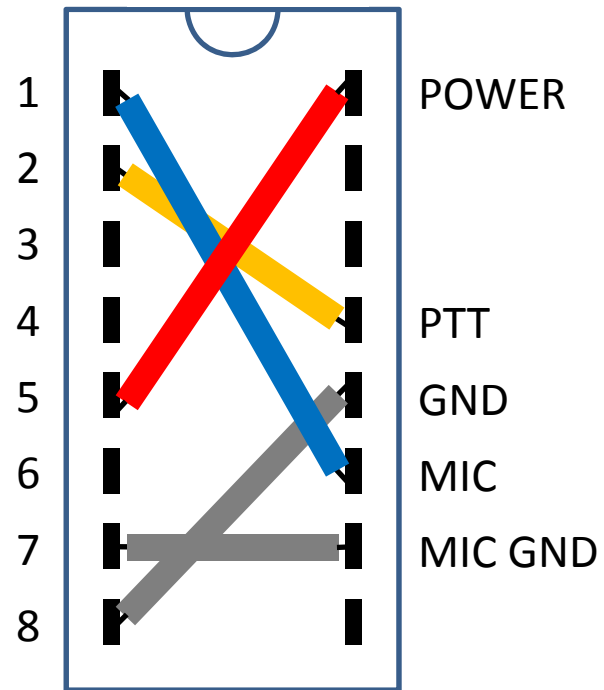


### Kenwood 4-pin Round



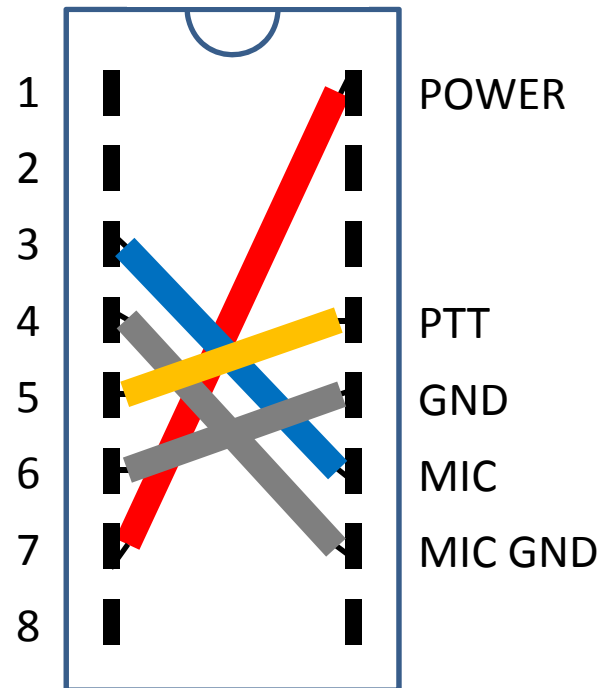
This requires an adapting cable to be constructed that connects the Hands Free RJ45 8-pin modular connector to the radio's 4-pin round connector

### Kenwood 8-pin Round



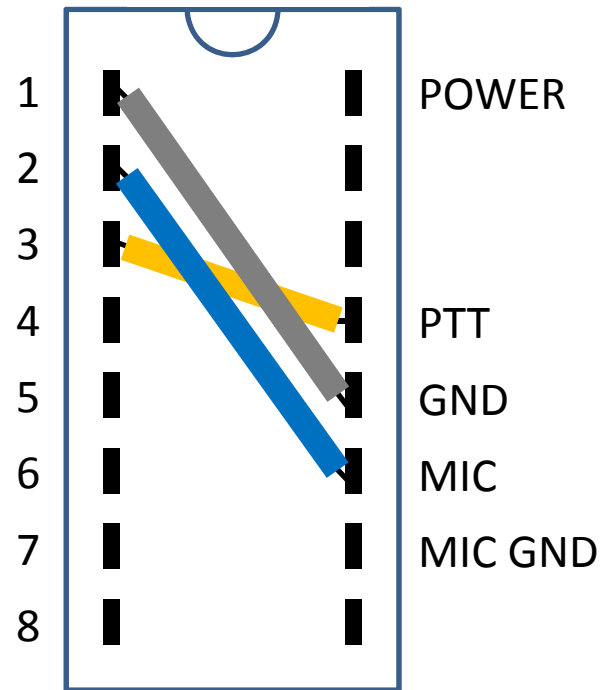
This requires an adapting cable to be constructed that connects the Hands Free RJ45 8-pin modular connector to the radio's 8-pin round connector

### Kenwood RJ45



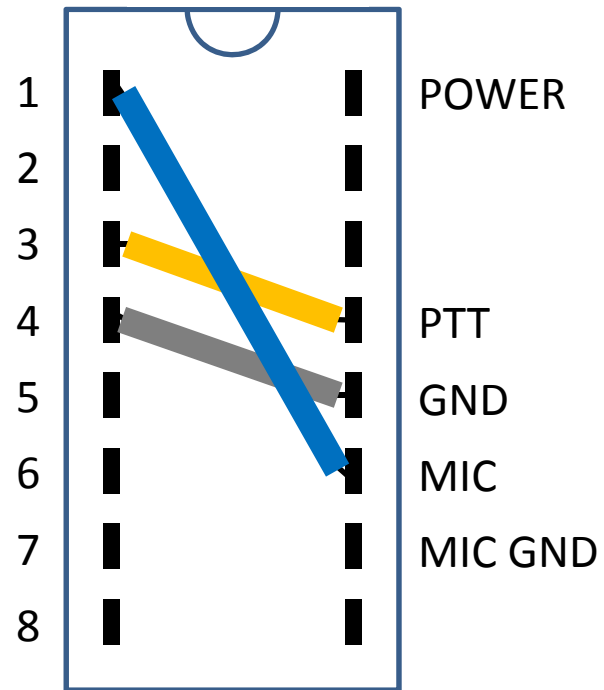
To avoid confusion, please remember that Kenwood's pin numbering for the radio's RJ45 shown in their documentation, is reversed from numbers 1-8 shown here.

### Yaesu 4-pin Round



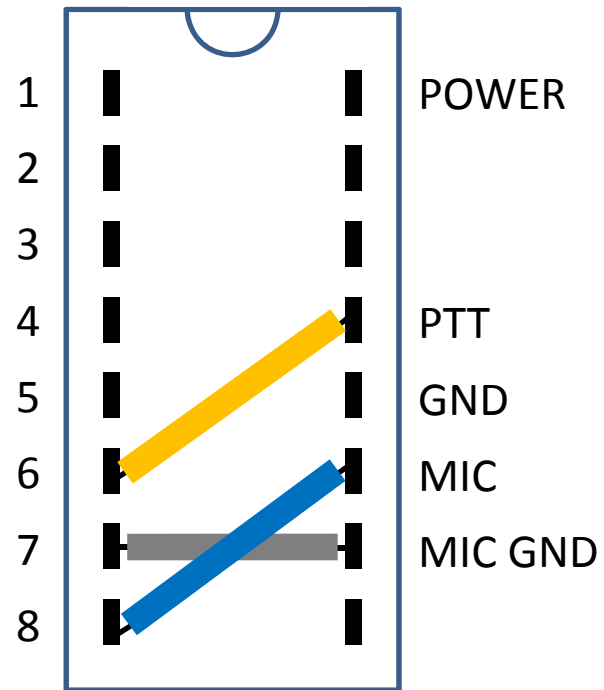
This requires an adapting cable to be constructed that connects the Hands Free RJ45 8-pin modular connector to the radio's 4-pin round connector

### Yaesu 6-pin Round



This requires an adapting cable to be constructed that connects the Hands Free RJ45 8-pin modular connector to the radio's 6-pin round connector

### Yaesu 8-pin Round

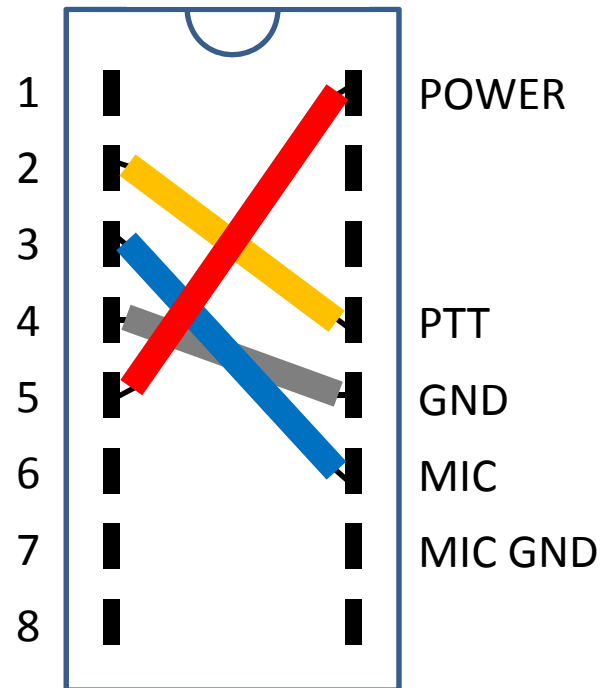


This requires an adapting cable to be constructed that connects the Hands Free RJ45 8-pin modular connector to the radio's 8-pin round connector

## Yaesu 6-pin RJ11

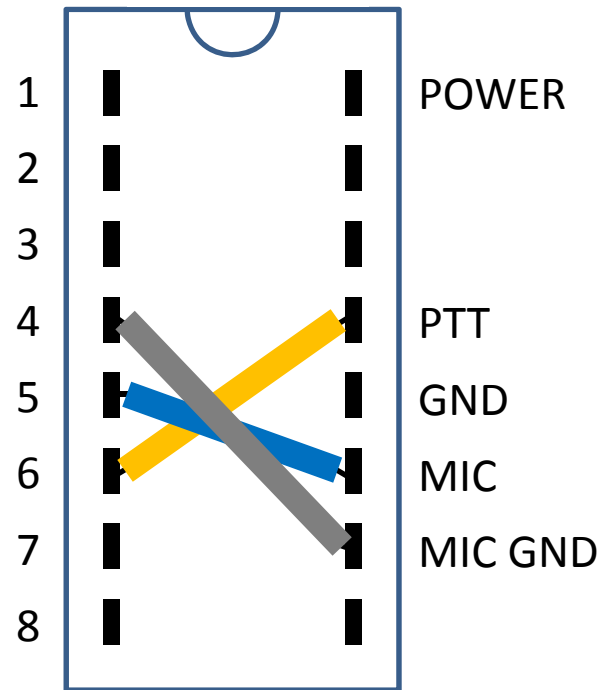
(when inserted into CENTRE of the Hands Free Board's 8-pin RJ45)

***TIP:** If you use a 6-pin RJ11 to a 6-pin RJ11 cable between your radio and the Hands-Free Adapter, you'll find that the 6pin RJ11 connector will satisfactorily plug into the Hands Free Adapter's 8pin RJ45 socket **USING THE CENTRE 6 PINS.** The jumpering shown here takes advantage of this fact.*



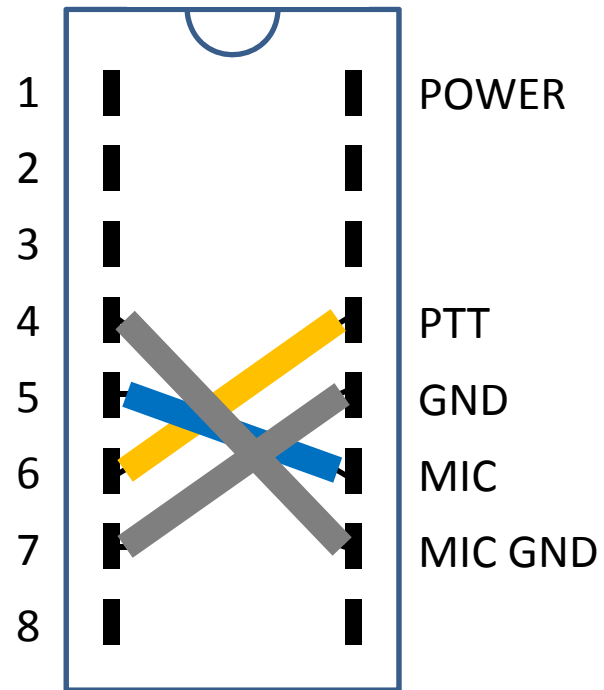
To avoid confusion, please remember that Yaesu's pin numbering for the radio's RJ11 shown in their documentation, is reversed from the numbers 1-8 shown here.

### Yaesu RJ45 Type-1



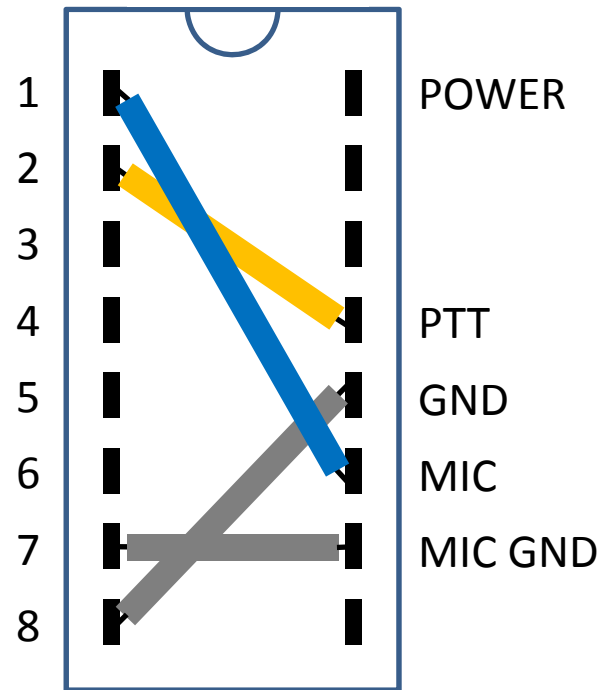
To avoid confusion, please remember that Yaesu's pin numbering for the radio's RJ45 shown in their documentation, is reversed from numbers 1-8 shown here.

### Yaesu RJ45 Type-2



To avoid confusion, please remember that Yaesu's pin numbering for the radio's RJ45 shown in their documentation, is reversed from numbers 1-8 shown here.

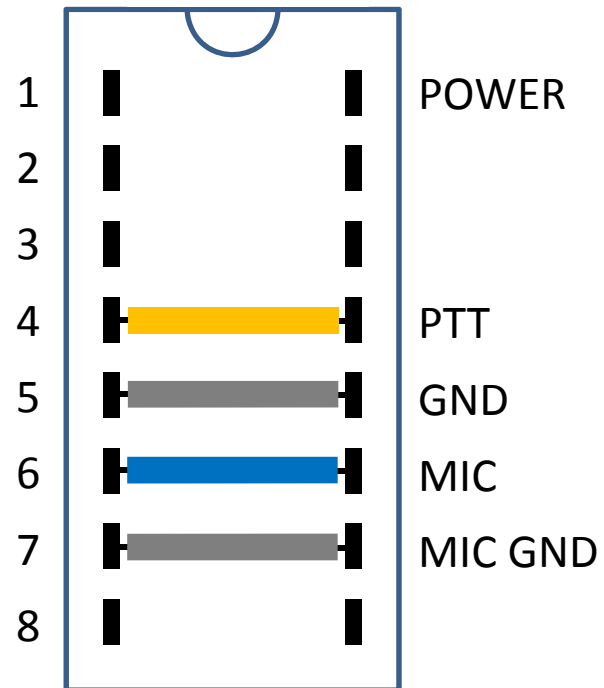
### Alinco 8-pin Round



**NOTE:** On some models (eg ALR22/24), +8vDC is also available on pin 5 and should be jumpered to POWER.

This requires an adapting cable to be constructed that connects the Hands Free RJ45 8-pin modular connector to the radio's 8-pin round connector

### Alinco RJ45



To avoid confusion, please remember that Alinco's pin numbering for the radio's RJ45 shown in their documentation, is reversed from numbers 1-8 shown here.



## **A WORD OR TWO ABOUT POWER**

The EMDRC Hands-Free Adapter is designed to operate with radio transceivers that can provide +8v or +9v DC at the Microphone connector. **IT IS STRONGLY SUGGESTED THAT YOU CONNECT YOUR COMPLETED HANDS FREE ADAPTER INITIALLY WITHOUT THE HEADER INSERTED AND CHECK THAT THE DC POWER IS BEING DELIVERED TO THE ANTICIPATED PIN NUMBER ON THE HEADER.** Most radios do not take kindly to having the output of their 8 or 9 volt regulator shorted to ground, and a little care here can save much heartache later.

### **But what if your radio does not provide 8v or 9v DC at the mic connector?**

There is provision on the Hands Free Adapter's PCB for an external power connector, nominally 13.8v from the vehicle's electrical system. If you use do use this connector we highly recommend that you separately fuse and filter the incoming vehicle power with a suitable DC filtering and surge suppression circuit – cars can provide a very hostile environment to sensitive electronics!

Another way for those suitably qualified or skilled is to open up and modify the radio to provide power to a spare pin on the mic socket. In this way no power filtering is required as the radio's DC power filter has done all the hard work for you already.



For more information about your particular radio, please refer to one of the many good internet sites, such as this excellent and comprehensive reference for microphone connections from Roy G4WPW:

<http://www.qsl.net/g4wpw/date.html>

*The EMDRC would appreciate your feedback if any errors or omissions are noted in the diagrams or information within this document.*