RADIO INTERFACING

Computer interfacing, covered in the previous chapter, is only half the interfacing task. The other half is connecting your MFJ-1278B to your radios.

MFJ-1278B Radio Ports

Interfacing the MFJ-1278B to your radios involves connecting the following signals at Radio Port 1 and Radio Port 2. The pin outs of Radio Port 1 and Radio Port 2 are shown in Fig. 3-1.

Pin 1 Microphone audio, from the MFJ-1278B to your transmitter.

Pin 2 Ground, audio and PTT common.

Pin 3 Push-to-talk, to allow the MFJ-1278B to key your transmitter.

Pin 4 Receive audio, from your receiver to the MFJ-1278B.

Pin 5 Squelch input (optional) to allow the MFJ-1278B to detect activity on a shared-mode channel.

Fig.3-1 Radio Port 1 and Radio Port 2 Connector

This chapter describes how to connect these signals between your MFJ-1278B and your radio and how to adjust the receive and transmit audio levels appropriately. The interconnection should be planned so as to minimize pickup of stray audio and RF noise by the lines. If possible, you should set up your station with a monitor speaker and be able to operate on voice without disconnecting the MFJ-1278B.

Radio Ports Connection

The two radio ports on the MFJ-1278B allow both an FM radio and as HF radio to be connected at all times. You can also connect two HF radios or two VHF radios to the radio ports. Pin designations for Radio port 1 and Radio port 2 are the same. See Fig. 3-1. Switching of the radio ports on the MFJ-1278B is done by using the **RADio** command. We will discuss radio port switching in the next chapter.

Use Fig. 3-2 to wire a microphone connector (not provided) to the 5 pin DIN cable provided. You will need to wire two radio cables if two radios are to be connected to the MFJ-1278B.

You may obtain the specific microphone connector pin designation for your radio from the your radio's manual. **Appendix A** at the end of this Instruction Manual lists pin assignments for some of the most popular radios. The accuracy of this information is not guaranteed. You should verify this information with your radio manual.

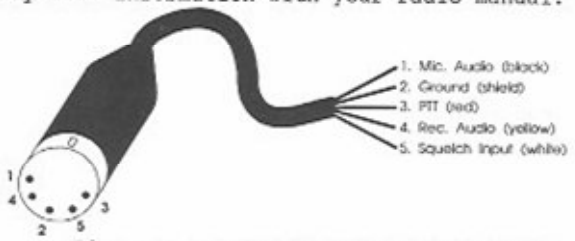

Fig. 3-2 Radio Connector Pin Diagram

Two 5-pin male DIN connector cables are provided with the MFJ-1278B for wiring to the microphone connector for your radio.

CHECK THIS CABLE WITH AN OHM METER TO IDENTIFY EACH WIRE BEFORE WIRING IT TO THE MIC CONNECTOR THAT FITS YOUR RADIO.

Handheld Radio Connection

Some **HTs** key the transmitter by drawing a small amount of current from the microphone input pin (see Fig. 3-3 below). Radios with this type of special keying circuit are ICOM-2AT (tm) and Yaesu FT-x09, FT-x3, FT-727 (tm) and others.

Appendix A at the end of this instruction manual provided pin designation for some of the radios. Also consult the instruction manual of your radio.

If your HT has this type of microphone input, you can wire the microphone like the one shown in Fig. 3-3 or you can remove the cover of the MFJ-1278B and install a shorting jumper at JMP L for Radio Port 1 or JMP K for Radio Port 2. Installing JMP K or JMP L will eliminating the need of soldering "Cx" and "Rx" to the microphone cable. "Cx" and Rx" are installed on the MFJ-1278B mother board. Fig. 3-4 shows the location of JMP L and JMP K connectors. On the MFJ-1278B mother board, the "Rx" resistor for Radio Port 1 is R140 and the "Rx" resistor for Radio Port 2 is R107. If you find the your radio still would not key properly after installing JMP L or JMP K, it may be necessary for you to change the value of R140 or R107 to a smaller value.

Be sure to remove **JMP K** or **JMP L** when connecting the MFJ-1278B to another type of radio.

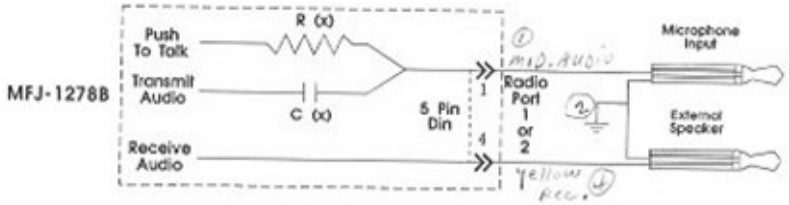

FIG. 3-3 HT Special Keying Circuit

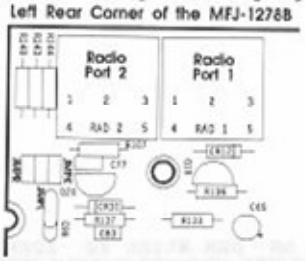

FIG. 3-4 MFJ-1278B JMP L and JMP K Location

RADIO INTERFACING METHODS

The MFJ-1278B was designed to allow hook-up without any modifications to the radio or any signal level balancing devices in the cables. Two interfacing methods are presented.

Method 1: Direct Connection to Microphone and Speaker

For Method 1, shown in Fig. 3-5, the MFJ-1278B's audio will be fed directly into the microphone connector or similarly connected auxiliary jack, and the output of the MFJ-1278B will be adjusted to give a proper modulation level. The receiver audio will be taken from an earphone plug or speaker jack and fed directly to the MFJ-1278B. A monitor speaker can be connected to the SPEAKER jack of the MFJ-1278B. This allows you to monitor the channel.

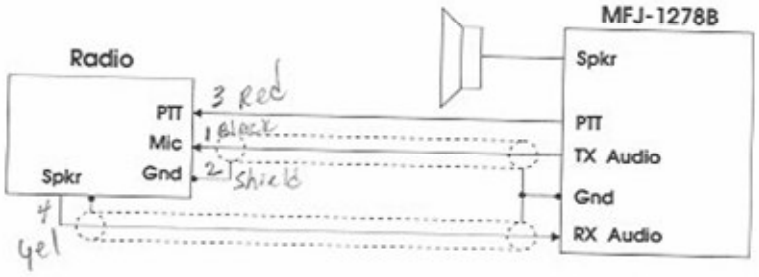

Fig. 3-5 Method One Interconnect.

The transmit audio levels for both radio ports are factory preset at 250 mV p-p to be compatible with the mic input of most radios. However, if the transmit audio is too low or distorted, adjustment may be needed. Use the following procedure to calibrate:

Method 2: Accessory Jack or Interface Box Connection

If your radio has an accessory jack with PTT, transmit audio, and receive audio signals, the interface can be done through this jack (shown in Fig. 3-6).

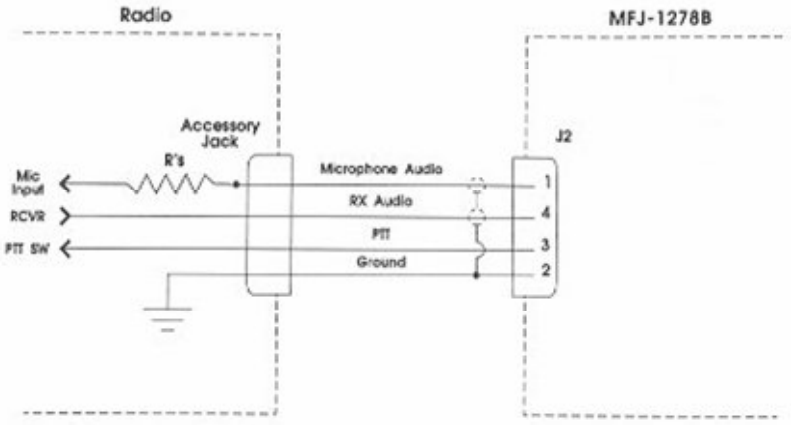

Fig. 3-6 Accessory Jack Interface.

If your radio does not have an accessory jack and you don't wish to add a connector to your radio, you may construct a separate external interface box. This box will permit simultaneous connection of your MFJ-1278B and a microphone. A schematic of an external interface box is shown in Fig. 3-7.

An interface box similar to the one shown in Fig. 3-7 is available from MFJ Enterprises, Inc. or from any MFJ dealers. Model No. is MFJ-1272B.

Regardless of whether you use an accessory jack or an external interface box, you should use shielded wire for all signal carrying leads. The connector types and pinouts will be determined by the connector jacks on your radio.

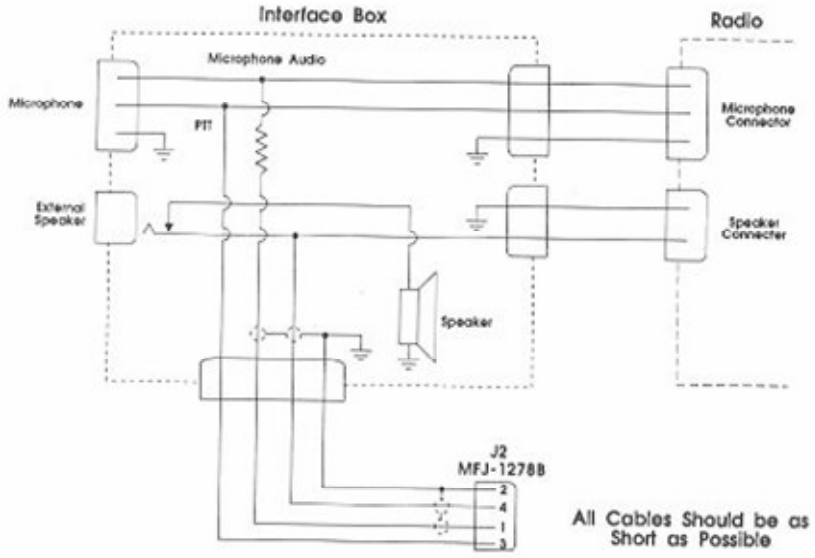

Fig. 3-7 External Interface Box