MFJ-1272M TNC/MICROPHONE SWITCH

Introduction

Thank you for purchasing the MFJ-1272M TNC/MIC Switch. The MFJ-1272M is designed to allow simultaneous connection of both your microphone and your TNC to the radio.

The MFJ-1272M microphone switches were designed to be used with any radio that has an 8-pin, RJ-45 modular microphone connector. Because many TNCs have different connectors, MFJ offers 5 models:

MFJ Model#	TNC and Multimodes
MFJ-1272M	All MFJ TNCs, TAPR TNC-2 clones, and PK-12/96/900
MFJ-1272MX	PK-232
MFJ-1272MYV	KAM® VHF port, KPC-9612, KPC-2, KPC-3
MFJ-1272MYH	KAM® HF port
MFJ-1272MZ	PK-88

CAUTION

Always check your radio's owner's manual to see if there is a voltage on one of the pins of the microphone before hooking up the microphone switch. You could damage your radio by connecting the PTT line to a voltage source. Do not connect any pin labeled as a voltage source to PTT!!!!!

Warning **MFJ Enterprises, Inc. *is not responsible* for damaged radios or associated equipment. It is *your responsibility* to make sure your connections will not damage the radio.**

Installation

Before you install the MFJ-1272M TNC/MIC switch, you must set it up for your particular radio. The MFJ-1272M comes pre-wired from the factory for Kenwood radios *without* RECEIVE AUDIO on the microphone jack. If you have one of these radios, the TNC/MIC switch is ready to use. If you have a Kenwood radio *with* RECEIVE AUDIO on the microphone jack, or if your radio is not a Kenwood, refer to the configuration section. We have given a few diagrams for placing the internal jumpers for a few popular radios on Page 8.

The MFJ-1272MYH model comes pre-wired and ready to use with the HF port on the Kantronics KAM® and Icom IC-706. The jumpers are setup for the IC-706 with RECEIVE AUDIO on pin 3 of the microphone plug.

Configuration

If you must configure the TNC/MIC switch for your radio, please follow this procedure.

1. Remove the two screws and top cover of the MFJ-1272M.

2. Look at the writing on the unit's pc board. Please refer to Tables 1 thru 6 as to where to place the jumpers in relation to the pinouts on you radio. ***Consult your radio's manual*** and the definitions below to match signals.

Audio Out:
Audio to the radio from either the TNC or radio MICROPHONE.

PTT:
This is the Push-to-talk signal from either the TNC or radio Microphone.

Receive Audio:

Audio from the radio to the TNC. Please refer to the **External Audio** section on the following page. If you use external audio make no connection here.

MIC Audio:
Audio from mic (same # as **Audio Out**)

Ground:
This is the system ground on radio's mic connector. Some radios have two ground pins, MICROPHONE GROUND and GROUND. The microphone ground *should not* be used, due to the possibility of introducing ''hum'' into the system. Always use the pin labeled ground.

Throughs:
Connect all pins here except MICROPHONE AUDIO.

(unlabeled)
if you use external audio do not connect the radio pins for Receive

3. Header HD3 controls the RECEIVE AUDIO to the EXTERNAL SPEAKER. Place a push-on jumper on pins 2 and 3 if you want the external speaker "on" all of the time., or on pins 1 and 2 if you want the external speaker "off" when using the TNC.. Most people prefer not to hear audio during packet. Set this jumper to the positions desired, according to your own preference.

4. Replace the top and screws.

External Audio
If your radio does not have RECEIVE AUDIO on the microphone, we suggest the use of an interconnecting cable to supply RECEIVE AUDIO to the TNC/MIC switch. You would connect the cable from an External Speaker or Headphones jack on your radio, to the AUDIO IN jack of the TNC/MIC switch. Therefore no jumper connection should be made for Receive on the pc board.

Using the method above for connecting RECEIVE AUDIO to the TNC/MIC switch, will cut off the internal speaker inside the radio. In this case, you must connect an external speaker to the EXT. SPEAKER jack on the TNC/MIC switch. Otherwise you will not be able to hear *any* signals at all from your radio.

Jumper Configuration
Because there are so many different radio configurations, we have tried to make the MFJ-1272M as versatile as possible. With the MFJ-1272M you can virtually connect any radio pin to just about any TNC pin, just by configuring the jumpers properly. The

following tables will show how to set the jumpers, depending on the TNC functions versus the MIC pins of your particular radio. Be sure to follow the tables closely, with your radio manual close at hand, to verify that you are not shorting any microphone voltages or any other microphone signals to GROUND !

Receive Audio Connections

Table 1 below shows where you would place a jumper if your radio has RECEIVE AUDIO on one of the microphone pins. For example, if your radio has RECEIVE AUDIO on pin 3 on a Kenwood microphone, you would place a jumper on position R3A in the RECEIVE section of header HD1. If your radio does not have RECEIVE AUDIO on one of the microphone pins, then *do not* place a jumper in the RECEIVE section of header HD1.

Radio MIC Pin *	MFJ-1272M Header	Jumper Placement for Kenwood & Yaesu	Jumper Placement for Icom & Radio Shack
1	HD1	RECEIVE--R1A	RECEIVE--R8A
2	HD1	RECEIVE--R2A	RECEIVE--R7A
3	HD1	RECEIVE--R3A	RECEIVE--R6A
4	HD1	RECEIVE--R4A	RECEIVE--R5A
5	HD1	RECEIVE--R5A	RECEIVE--R4A
6	HD1	RECEIVE--R6A	RECEIVE--R3A
7	HD1	RECEIVE--R7A	RECEIVE--R2A
8	HD1	RECEIVE--R8A	RECEIVE--R1A

Table 1

*Refer to **External Audio**, page 3

PTT (Push-to-Talk Connections)

Table 2 below shows where you would place a jumper, depending on what microphone pin is designated, PTT. For example, if PTT is designated as being pin 4 on a Kenwood microphone, then you would place a jumper on position, R4B in the PTT section of header HD1.

Radio MIC Pin	MFJ-1272M Header	Jumper Placement for Kenwood & Yaesu	Jumper Placement for Icom & Radio Shack
1	HD1	PTT--R1B	PTT--R8B
2	HD1	PTT--R2B	PTT--R7B
3	HD1	PTT--R3B	PTT--R6B
4	HD1	PTT--R4B	PTT--R5B
5	HD1	PTT--R5B	PTT--R4B
6	HD1	PTT--R6B	PTT--R3B

7	HD1	PTT--R7B	PTT--R2B
8	HD1	PTT--R8B	PTT--R1B

Table 2

Audio Out Connections

Table 3 below shows where you would place a jumper, depending on what microphone pin is designated MIC. The microphone designated MIC, is the pin that the transmit audio from the TNC comes into the radio. For example, if MIC is designated as being pin 1 on a Kenwood microphone, then you would place a jumper on position R1C in the AUDIO OUT section of header HD1.

Radio MIC Pin	MFJ-1272M Header	Jumper Placement for Kenwood & Yaesu	Jumper Placement for Icom & Radio Shack
1	HD1	AUDIO OUT--R1C	AUDIO OUT--R8C
2	HD1	AUDIO OUT--R2C	AUDIO OUT--R7C
3	HD1	AUDIO OUT--R3C	AUDIO OUT--R6C
4	HD1	AUDIO OUT--R4C	AUDIO OUT--R5C
5	HD1	AUDIO OUT--R5C	AUDIO OUT--R4C
6	HD1	AUDIO OUT--R6C	AUDIO OUT--R3C
7	HD1	AUDIO OUT--R7C	AUDIO OUT--R2C
8	HD1	AUDIO OUT--R8C	AUDIO OUT--R1C

Table 3

Ground Connections

Table 4 below shows where you would place a jumper depending on what microphone pin is designated GROUND. For example, if GROUND is designated as being pin 7 on a Kenwood microphone, then you would place a jumper on position R7D in the GROUND section of header HD2.

Radio MIC Pin	MFJ-1272M Header	Jumper Placement for Kenwood & Yaesu	Jumper Placement for Icom & Radio Shack
1	HD2	GROUND--R1D	GROUND--R8D
2	HD2	GROUND--R2D	GROUND--R7D
3	HD2	GROUND--R3D	GROUND--R6D
4	HD2	GROUND--R4D	GROUND--R5D
5	HD2	GROUND--R5D	GROUND--R4D
6	HD2	GROUND--R6D	GROUND--R3D
7	HD2	GROUND--R7D	GROUND--R2D
8	HD2	GROUND--R8D	GROUND--R1D

Tabel 4

Always use the MIC pin designated as GROUND (not mic ground). The use of MIC GROUND could result in audio "hum" in the system.

Through Connections

Table 5 below shows where you would place jumpers, depending on the microphone pin functions that are not to be switched by the MFJ-1272M. Microphone pins designated, +V, UP, DWN, are radio functions that are not needed by the TNC, but are needed for normal microphone operations. For example, if on a Kenwood microphone pin 3 is designated as being UP, which would be for increasing your frequency readout on the radio, then you would place a jumper on the HD2 header position on the MFJ-1272M PC board labeled R3E-M3A.

Radio MIC Pin	MFJ-1272M Header	Jumper Placement for Kenwood & Yaesu	Jumper Placement for Icom & Radio Shack
1	HD2	R1E - M1A	R8E - M8A
2	HD2	R2E - M2A	R7E - M7A
3	HD2	R3E - M3A	R6E - M6A
4	HD2	R4E - M4A	R5E - M5A
5	HD2	R5E - M5A	R4E - M4A
6	HD2	R6E - M6A	R3E - M3A
7	HD2	R7E - M7A	R2E - M2A
8	HD2	R8E - M8A	R1E - M1A

Table 5

Mic Audio Connections

Table 6 below shows where you would place a jumper, depending on what microphone pin is designated, MIC AUDIO. For example, if on a Kenwood, MIC AUDIO is designated as being pin 5 of the microphone, then you would place a jumper on position M5B in the AUDIO IN section of header HD2.

Radio MIC Pin	MFJ-1272M Header	Jumper Placement for Kenwood & Yaesu	Jumper Placement for Icom & Radio Shack
1	HD2	AUDIO IN--M1B	AUDIO IN--M8B
2	HD2	AUDIO IN--M2B	AUDIO IN--M7B
3	HD2	AUDIO IN--M3B	AUDIO IN--M6B
4	HD2	AUDIO IN--M4B	AUDIO IN--M5B
5	HD2	AUDIO IN--M5B	AUDIO IN--M4B

6	HD2	AUDIO IN--M6B	AUDIO IN--M3B
7	HD2	AUDIO IN--M7B	AUDIO IN--M2B
8	HD2	AUDIO IN--M8B	AUDIO IN--M1B

Table 6

*Refer to **External Audio**, page 3

The jumper listings on the previous tables *do not* always hold true for all Kenwood, Yaesu, Icom and Radio Shack transceivers. ***The best way to setup the MFJ-1272M correctly, is to have your transceiver manual handy at the time of setup***. Having your transceiver manual handy will ensure that you setup the MFJ-1272M properly, by making the right connections the first time.

If you find yourself in need of technical help, please refer to the **Technical Assistance** section of this manual. Please have all necessary notes and data ready, so we can provide you with the best possible service at the time of your call.

Note: Jumper positions for specific radios are detailed on page 8.

Note: The FT-2400H and FT-2500H are the only Yaesu VHF transceivers that are compatible with the MFJ-1272M. All others, such as the FT-3000, FT-8000, and FT-8500, use data ports for packet data.

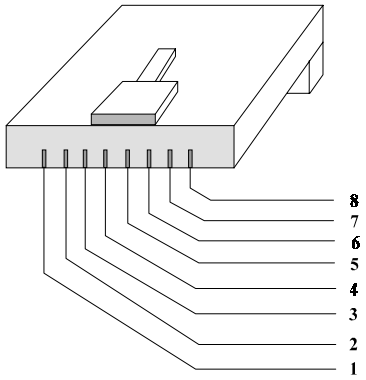
Jumper Placement Diagrams for specific radios

Other Notes

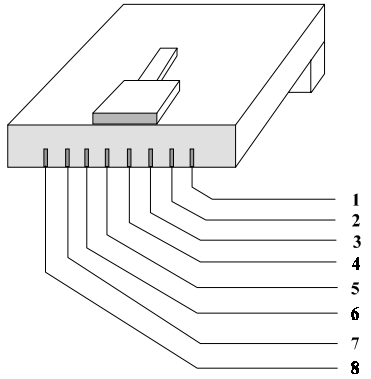
All of the jumper designations and wiring on the MFJ-1272M come setup for Yaesu and Kenwood transceivers. So, if your RECEIVE AUDIO is on pin 3 of your Kenwood microphone, then you would place a jumper on R3A in the RECEIVE section of HD1. You may need to change the installed jumpers for the radio you are trying to use. The MFJ-1272M is compatible with the the Yaesu FT-2400H and FT-2500H. All other Yaesu transceivers will either be the standard round 8-pin screw-on type, or in the case of the FT-3000, FT-8000 and FT-8500, all packet data is taken in and out through the DATA PORT in the back of the radio. In this case, the MFJ-1272M is totally incompatible.

If you want to use the MFJ-1272M with an Icom or Radio Shack transceiver, then all jumper designations need to be thought of in reverse order. This is due to the numbering scheme on the Radio Shack and Icom microphones. So if your RECEIVE AUDIO is on pin 3 of your Icom microphone, then you would place a jumper on R6A in the RECEIVE section of HD1.

The MIC pins on the Radio Shack and Icom radios are numbered 1 through 8, from left to right. Whereas, the Yaesu and Kenwood radio MIC pins are numbered 1 through 8, from right to left. The only Yaesu transceivers that are compatible with this unit are the FT-2400 and FT-2500. All other Yaesu transceivers, such as the FT-3000, FT-8000, and FT-8500, use data ports, which are located in the back of the radios for all packet type communications.



Mic Plug Numbering:
Icom & Radio Shack



Mic Plug Numbering:
Kenwood & Yaesu

This means that the labels on the MFJ-1272M printed circuit board are backwards for the Icom radios, such as the IC-2340, IC-2350, IC-281H, IC-2000H, and IC-706. This also holds true for the Radio Shack HTX-212 VHF transceiver.

For example, MIC audio is designated as pin 6 in the ICOM IC-2340 manual, but on our MFJ-1272M board it is pin 3, so R3C and M3B have jumper clips on them. All other pin designations for the Icom and Radio Shack radios are also backwards.

Connections

Connection of the MFJ-1272M is very simple.

1. Connect your radio's microphone to the microphone connector on the front panel of the MFJ-1272M. Make sure that that you hear a ''click'' when the microphone snaps into place.

2. Connect the gray, 8-pin MIC plug, which exits the rear of the MFJ-1272M out of the TO RADIO slot, to the microphone jack on the radio.

3. Connect the TNC cable, which exits the rear of the MFJ-1272M out of the TO TNC slot, to the TNC.

External Receive Audio Connection

If you have a radio without RECEIVE AUDIO on the microphone connector, you will need to perform steps 4 and 5.

4. Connect a cable from the headphones or speaker out jack of the radio to the AUDIO IN jack of MFJ-1272M. The AUDIO IN jack on the TNC/MIC switch requires an RCA male phono plug.

5. Connect a speaker to the EXT. SPKR jack on the back of the MFJ-1272M. The EXT. SPKR jack requires a

3.5mm *mono* plug, with the tip being positive and the sleeve ground.

Technical Assistance

If you have any problem with this unit first check the appropriate section of this manual. If the manual does not reference your problem or your problem is not solved by reading the manual, you may call *MFJ Technical Service* at **601-323-0549** or the *MFJ Factory* at **601-323-5869**. You will be best helped if you have your unit, manual and all information on your station handy so you can answer any questions the technicians may ask.

You can also send questions by mail to MFJ Enterprises, Inc., 300 Industrial Park Road, Starkville, MS 39759; by Facsimile to 601-323-6551; or by email to techinfo@mfjenterprises.com. Send a complete description of your problem, an explanation of exactly how you are using your unit, and a complete description of your station.

Schematic