MFJ-1272B TNC/Microphone Switch

Introduction

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

The MFJ-1272B microphone switches were designed to be used with any radio that has a standard, round, 8-pin microphone connector. Because many TNCs have different connectors, MFJ offers 5 models:

MFJ Model Number	TNC and Multimodes
MFJ-1272B	All MFJ TNCs, TAPR TNC II clones, and PK-12/96/900
MFJ-1272BX	PK-232
MFJ-1272BYV	KAM® VHF port, KPC-2, KPC-3
MFJ-1272BYH	KAM HF port
MFJ-1272BZ	PK-88

For circuit board revisions, refer to page 11.

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.**

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Installation

Before you install the MFJ-1272B TNC/MIC switch, you must set it up for your particular radio. The MFJ-1272B comes pre-wired from the factory for Kenwood and Alinco 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 or Alinco radio *with* RECEIVE AUDIO on the microphone jack, or if your radio is not a Kenwood or Alinco refer to the configuration section. We have given a few diagrams for placing the internal jumpers for a few popular radios on Page 6.

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-1272B.

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 your radio. ***Consult your radio's manual*** and the definitions below to match signals.

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

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

    Receive:
    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.

    Audio In:
    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.

(unlabled)
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. Place the jumper 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.

4.   Replace the top and screws.

External Audio
If your radio does not have RECEIVE AUDIO on the microphone, then we suggest the use of an inter-connecting to supply RECEIVE AUDIO to the TNC/MIC switch. You would connect a 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-1272B as versatile as possible. With the MFJ-1272B 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 a particular radio. Be sure to follow the tables closely with your radio manual, 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 had RECEIVE AUDIO on one of the microphone pins. For example, if your radio had 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-1272B Header	Place a jumper on:
1	HD1	RECEIVE--R1A
2	HD1	RECEIVE--R2A
3	HD1	RECIEVE--R3A
4	HD1	RECEIVE--R4A
5	HD1	RECEIVE--R5A
6	HD1	RECEIVE--R6A
7	HD1	RECEIVE--R7A
8	HD1	RECEIVE--R8A

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-1272B Header	Place a jumper on:
1	HD1	PTT--R1B
2	HD1	PTT--R2B
3	HD1	PTT--R3B
4	HD1	PTT--R4B
5	HD1	PTT--R5B
6	HD1	PTT--R6B
7	HD1	PTT--R7B
8	HD1	PTT--R8B

Table 2

Audio Out Connection
Table 3 below shows where you would place a jumper, depending on what microphone pin is designated MICROPHONE AUDIO. The microphone pin, designated MICROPHONE AUDIO, is the where the transmit audio from the TNC comes into the radio. For example, if MICROPHONE AUDIO is designated 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-1272B Header	Place a jumper on:
1	HD1	AUDIO OUT--R1C
2	HD1	AUDIO OUT--R2C
3	HD1	AUDIO OUT--R3C
4	HD1	AUDIO OUT--R4C
5	HD1	AUDIO OUT--R5C
6	HD1	AUDIO OUT--R6C
7	HD1	AUDIO OUT--R7C
8	HD1	AUDIO OUT--R8C

Table 3

Ground Connections
Table 4 below shows where you 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-1272B Header	Place a jumper on:
1	HD2	GROUND--R1D
2	HD2	GROUND--R2D
3	HD2	GROUND--R3D
4	HD2	GROUND--R4D
5	HD2	GROUND--R5D
6	HD2	GROUND--R6D
7	HD2	GROUND--R7D
8	HD2	GROUND--R8D

Table 4

Most radios have two ground pins on the microphone, GROUND and MICROPHONE GROUND. Be sure to use the pin designated as ground, not microphone ground, when making your jumper connections. The use of the microphone ground could introduce audio hum in the system.

Through Connections

Table 5 below shows where you would place a jumper, depending on the microphone pin functions that are not to be switched by the MFJ-1272B. Microphone pins designated, +V, UP and DOWN, 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 position, R3E-M3A on header HD2.

Radio MIC Pin	MFJ-1272B Header	Place a jumper on:
1	HD2	R1E--M1A
2	HD2	R2E--M2A
3	HD2	R3E--M3A
4	HD2	R4E--M4A
5	HD2	R5E--M5A
6	HD2	R6E--M6A
7	HD2	R7E--M7A
8	HD2	R8E--M8A

Table 5

Mic Audio Connections

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

Radio MIC Pin	MFJ-1272B Header	Place a jumper on:
1	HD2	AUDIO IN--M1B
2	HD2	AUDIO IN--M2B
3	HD2	AUDIO IN--M3B
4	HD2	AUDIO IN--M4B
5	HD2	AUDIO IN--M5B
6	HD2	AUDIO IN--M6B
7	HD2	AUDIO IN--M7B
8	HD2	AUDIO IN--M8B

Table 6

Jumper positions for specific radios:

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Connections
Connection of the MFJ-1272B is very simple.

1. Connect your radio's microphone to the microphone connector on the front panel of the MFJ-1272B. Be careful not to bend any of the microphone connector pins. If the microphone plug does not insert easily, then *do not* force it. Find out what the problem is. Tighten the threaded portion of the microphone securely.

2. Connect the 8-pin MIC plug which exits the rear of the MFJ-1272B, to the microphone connector on the radio. Be careful not to bend any of the microphone connector pins. If the microphone plug does not insert easily, then *do not* force it. Find out what the problem is. Tighten the threaded portion of the microphone securely.

3. Connect the TNC cable which exits the rear of the MFJ-1272B, 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 the MFJ-1272B. 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-1272B. The EXT. SPKR. jack requires a 3.5mm *mono* plug, with the tip being positive and the sleeve being 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 FAX to 601-323-6551; through Compuserve at 76206,1763; or by email to mfj@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.

Our goal is to provide you, the customer, with the best technical assistance we can, and to see that it is as accurate as possible.

Circuit Board Revisions

Note: This manual is written for the Revision 9 circuit board, pictured on the right. The only difference between revisions 8 and 9 is the pin labeling of the connectors HD1 and HD2. If your board is revision 8, please refer to the labeling of the revision 9 board.

Schematic