## MFJ-1048 PASSIVE PRESELECTOR

## Introduction

The MFJ-1048 Passive Preselector is designed to reduce receive overload from strong out of band signals. It contains selective circuits that cover 1.6 to 33 MHz in six steps, providing the greatest selectivity on the lowest frequencies where overload is most common.

The MFJ-1048 also features internal transmit-receive switching with adjustable time delay. A rear panel jack is available for an external control that will switch the MFJ-1048 into a bypass mode (we strongly recommend using the external control line for switching to avoid pull in timing errors)

The MFJ-1048 has two rear panel SO-239 connectors for RF connections and a standard 2.1 mm power receptacle for 10 to 16 volt DC voltage. If DC voltage is not applied, the MFJ-1048 will remain in a bypass mode.

## Installation

Connect the MFJ-1048 Passive Preselector between your antenna and receiver or transceiver antenna connector as shown in Figure 1. The Radio connector goes directly to the transceiver or receiver with a short well shielded lead; the Antenna connector goes to the antenna through any amplifier, TVI filter, or any other station equipment.


Figure 1
WARNING: NEVER connect an amplifier or radio with more than 200 watts output to the MFJ-1048 Passive Preselector. NEVER use an internal antenna tuner to correct for high SWR if the tuner is in the radio or on the radio side of the MFJ-1048 Passive Preselector. Failure to follow this warning may allow your MFJ1048 Passive Preselector or other equipment to be damaged.

The Control line connects to the transceiver's normally open $S / R(T / R)$ relay contact, and bypasses the passive preselector when transmitting (See Figure 2).


Figure 2
Note: We highly recommend you use the transceiver's T/R connection instead of the internal RF switching circuit. This will normally prevent or reduce the chance of "hot-switching" the MFJ-1048 Passive Preselector's relay.

## Operation

With the MFJ-1048 Passive Preselector properly connected, simply turn the Band switch to the desired band and adjust the Tune control for maximum signal level. With the Power switch depressed and power applied, the MFJ1048 Passive Preselector becomes active.

Adjust the Tune control for maximum signal level. The maximum loss on the desired amateur band is less than 5 dB if the correct frequency range is selected.

Note: Always use the highest frequency band range that covers the desired band for minimum loss.

Typical frequency response is shown in Figure 3.
A: Transmission Loss


Figure 3

## 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$\mathbf{0 5 4 9}$ or the MFJ Factory at $\mathbf{6 0 1 - 3 2 3 - 5 8 6 9}$. 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.

## Parts List

| Designator | Description | P/N |
| :---: | :---: | :---: |
| R8, R9, R10, R11 | Resistor, 1206, 10 Ohm | 100S-1100 |
| R1 | Resistor, 1206, 150 Ohm | 100S-2150 |
| R3, R4 | Resistor, 1206, 10K Ohm | 100S-4100 |
| R2 | Resistor, 1206, 47K Ohm | 100S-4470 |
| R7 | Resistor, Pot, LT, 1M Ohm | 162-6100-1 |
| C7 | Capacitor, Disc Cer., 22pF | 200-1018 |
| C8 | Capacitor, 0805, 68pF | 200S-0068 |
| C5 | Capacitor, 0805, .001uF | 200S-1010 |
| C3 | Capacitor, 0805, .01uF | 200S-1110 |
| C1, C2 | Capacitor, 0805, .1uF | 200S-1210 |
| C4 | Capacitor, Elec., 10uF | 203S-1210 |
| C6 | Capacitor, Air Var., 6-200uF | 204-5160 |
| D1, D2, D3 | Diode, SOT-23, CMPD-914 | 300S-0914 |
| D5 | Diode, SMB, CMR1-02 | 300S-4001 |
| D4 | Diode, Zener, SOT-23, 5.1V | 301-5231 |
| Q2 | Transistor, SOT-23, 3904 | 305-3904-SM |
| Q1 | Transistor, SOT-23, 2N7002 | 305-7002-SM |
| L2 | Inductor, Grn-Blu-Gld, 5.6uH | 401-3560 |
| L1 | Inductor, Brn-Grn-Blk, 15uH | 401-4150 |
| L5 | Inductor, Brn-Grn-Slv, .15uH | 401-2150 |
| L3 | Inductor, Red-Red-Gld, 2.2uH | 401-3220 |
| L4 | Inductor, Blu-Gry-Slv, .68uH | 401-2680 |
| L6 | Inductor, Choke, 1A, 39uH | 401-4390-1 |
| RLY1 | Relay, 12VDC | 408-2142 |
| T1, T2 | Bead, Ferrite, 4T, \#73 | 412-3801 |
| SW2 | Switch, Rotary, 2P6P | 500-1565 |
| SW1 | Switch, Vert., 2P2P, Lock | 504-4022 |
| CTRL | Jack, RCA Phono, Ch. Mt. | 600-1003 |
| PWR | Jack, DC Coax, Ch. Mt. | 601-6121 B |
| ANT, RADIO | Connector, UHF, 4 Hole Mt. | 610-2005 |

## Schematic

