

# Keyer Selector Installation

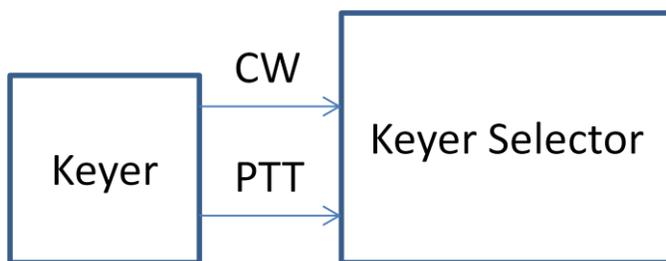
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This describes how to wire the Keyer Selector into a station for various purposes.

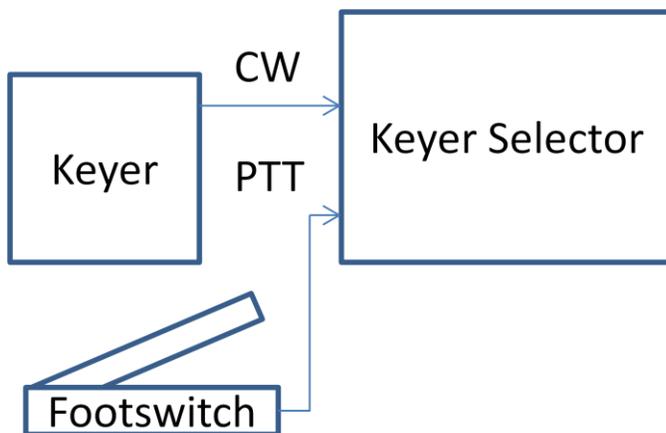
## PTT

The keyer selector uses PTT to determine whether an operator is trying to transmit. Therefore the PTT lines must be connected.

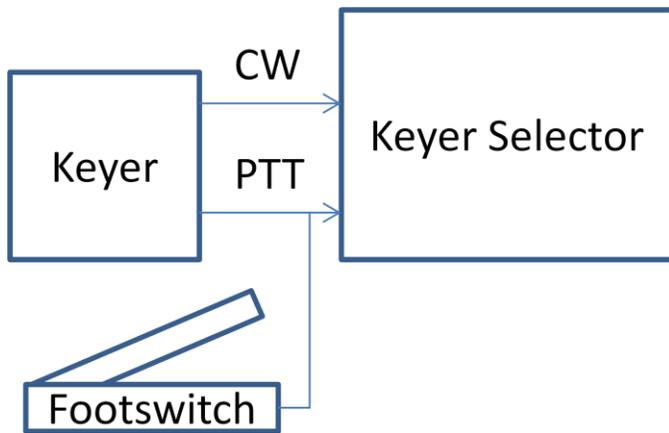
If the keyer has a PTT output it can be connected to the Keyer Selector. Popular keyers, such as the Winkey and YCCC SO2R Box have this capability.



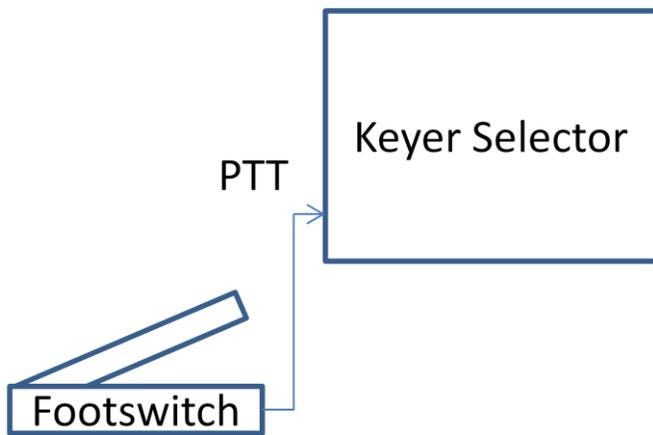
If the operator prefers a footswitch that can be used instead.



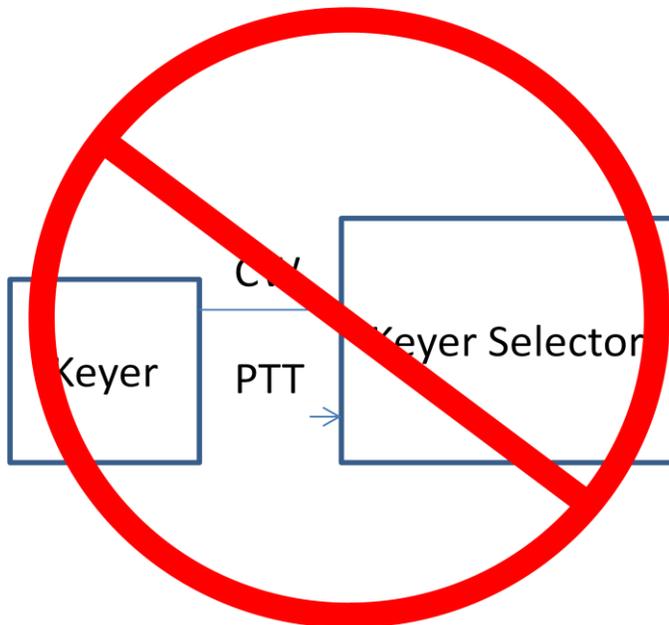
Or the keyer and footswitch can both be connected in parallel.



For phone, a footswitch must be used. The Keyer Selector cannot handle VOX.



What will NOT work is connecting the keyer with nothing on the PTT:

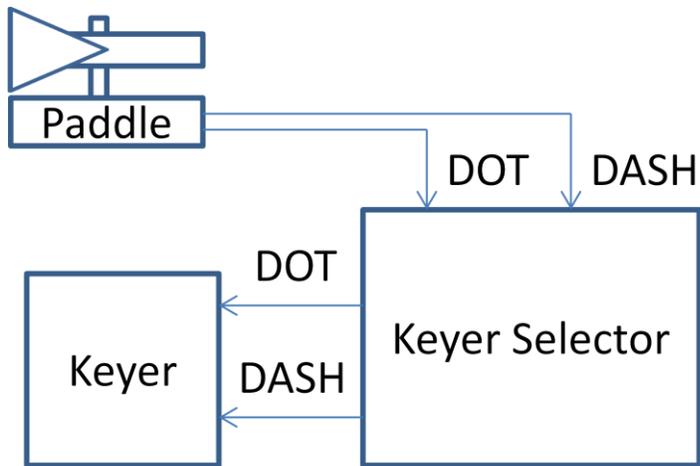


## Paddle

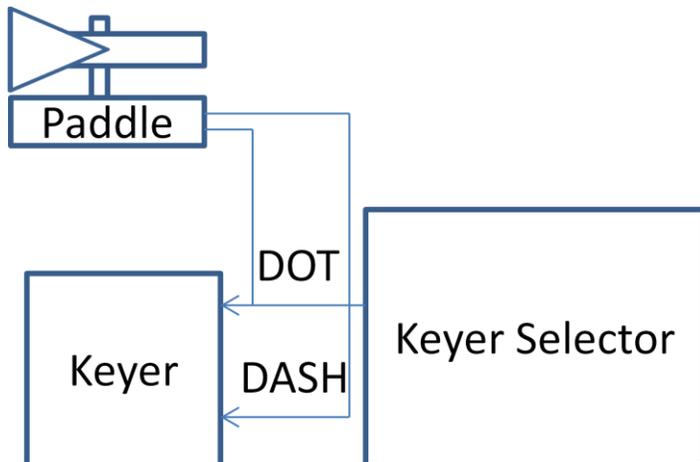
The Keyer Selector must be connected to the paddle input of the keyer. The reason is simple. Suppose two operators are handling a pile-up. Operator 1 copies EE5E and operator 2 copies JQ1JJJ/0. They both hit the key on their computer which sends the callsign. Operator 1 hits the key slightly before operator 2 and the transmitter sends EE5E 5NN5. Operator 2's computer would still be sending so this would be followed by JJJ 5NN5. Not good.

The Keyer Selector solves this by briefly closing the dot paddle when an operator who is blocked tries to transmit. The keyer thinks the operator is sending with the paddle and aborts the computer sending.

For this reason the paddle input on the keyer should be connected to the paddle connection on the Keyer Selector even if no paddle is connected.



The paddle and Keyer Selector can also be connected in parallel externally.

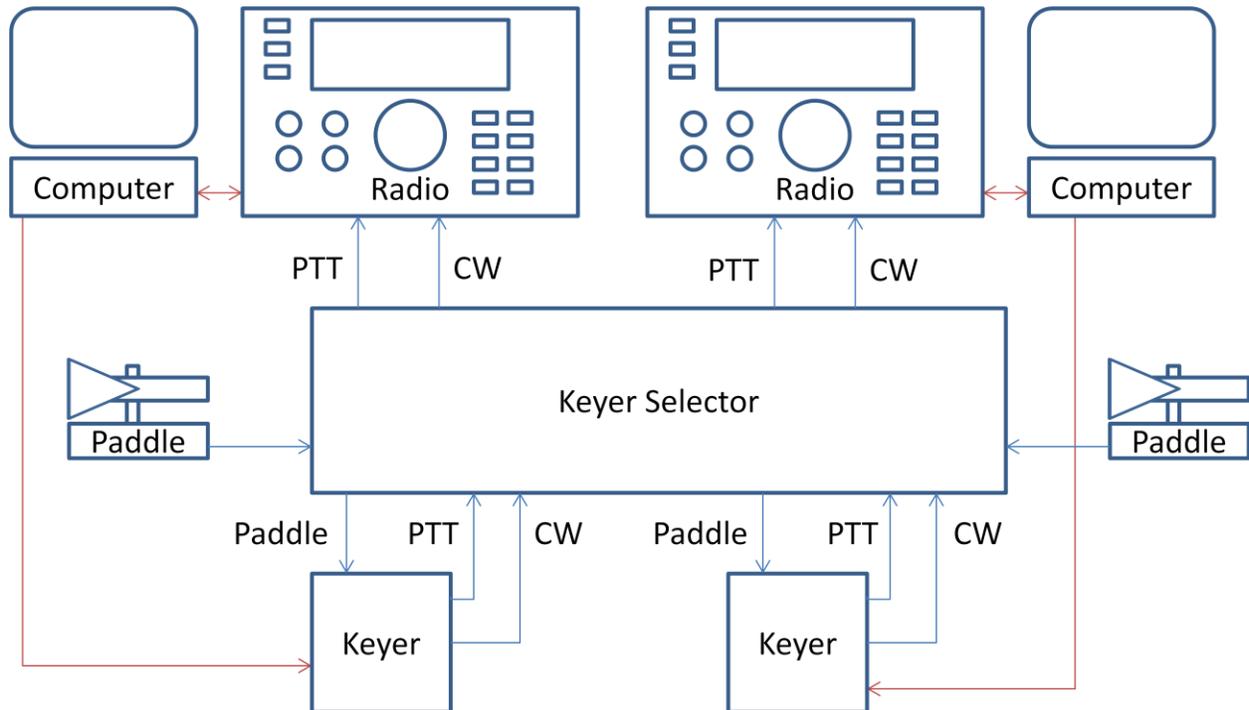


Only the dot side of the keyer selector needs to be connected.

Some operators use their paddle left-handed, with the dot and dash reversed. In this case the keyer selector will send a dash rather than a dot – this will work fine.

## MO2R

This is the most versatile installation for the Keyer Selector.



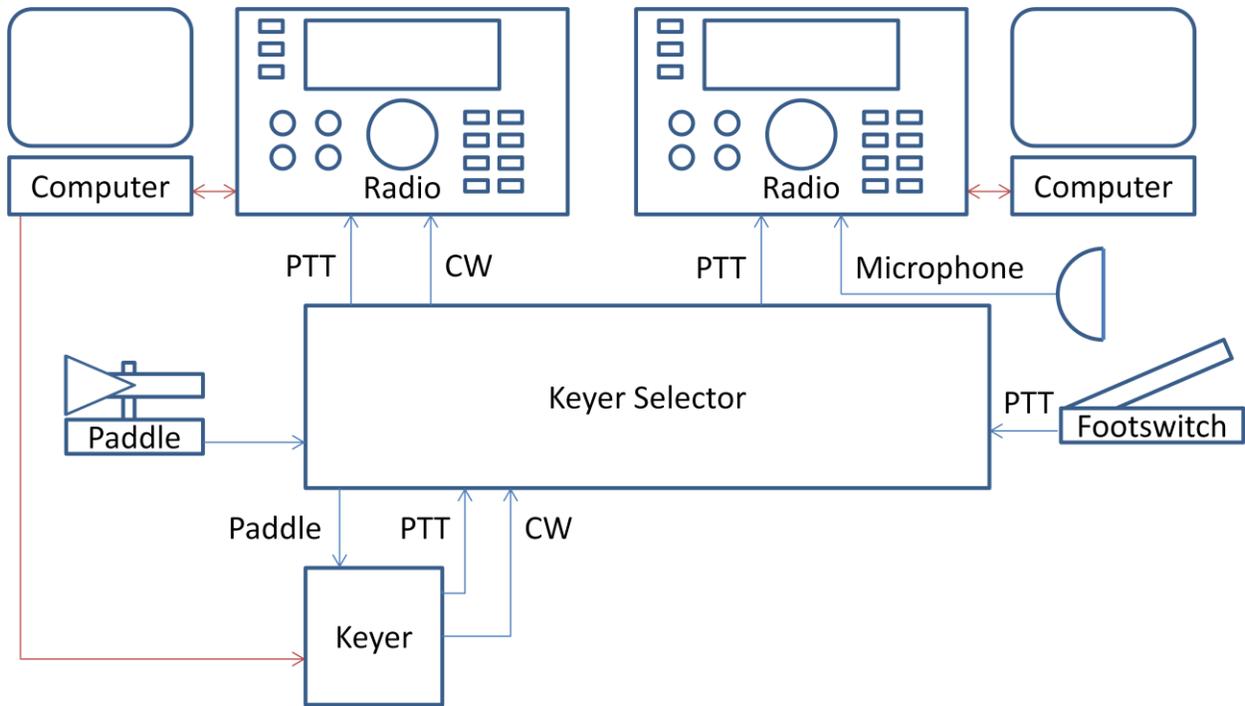
Depending on the position of the Transmit switch, either operator can transmit through one or both radios.

If both operators are listening to the run frequency the transmit switch might be set for BOTH if external relays control the connection between the radio and the antennas (See the Jun/July 2011 NCJ for information about CR3L MO2R). It could also be set to 1 or 2 in which case each operator could listen on one radio and both could transmit on the same radio.

If one operator is running and the other is chasing multipliers (or if both are chasing multipliers) the transmit switch could be set to INDEPENDENT. Operator 1 would transmit and receive on radio 1 and operator 2 would transmit and receive on radio 2. The Keyer Selector interlocks the radios so only one can transmit at a time. The priority switch could be set to give priority to the operator who is working the multipliers.

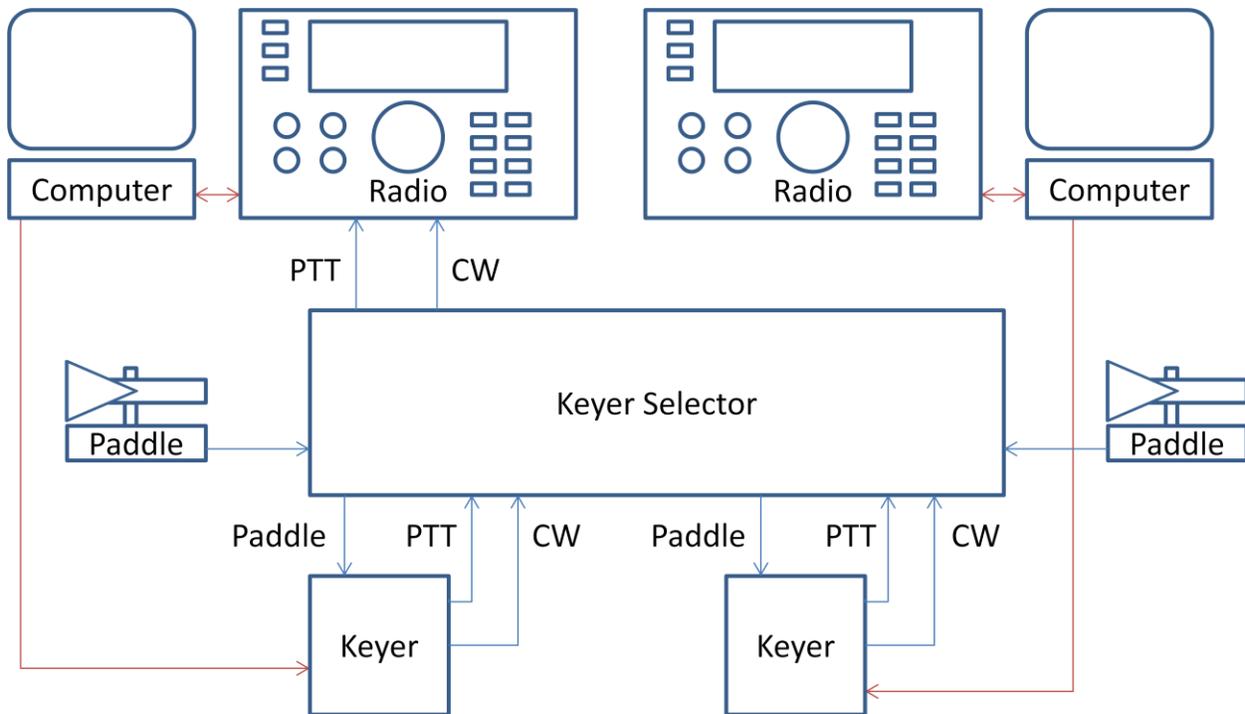
If the transmit switch is set to UNLOCKED the radios become two independent stations. This could be used in a small multi-multi to sometimes use two radios on a band and other times use them on different bands.

In contests where multiple modes are used, such as the ARRL Ten Meter Contest, one radio can be set up for phone and one for CW.



### MO1.5R

MO1.5R is similar to MO2R except that only one radio can transmit.



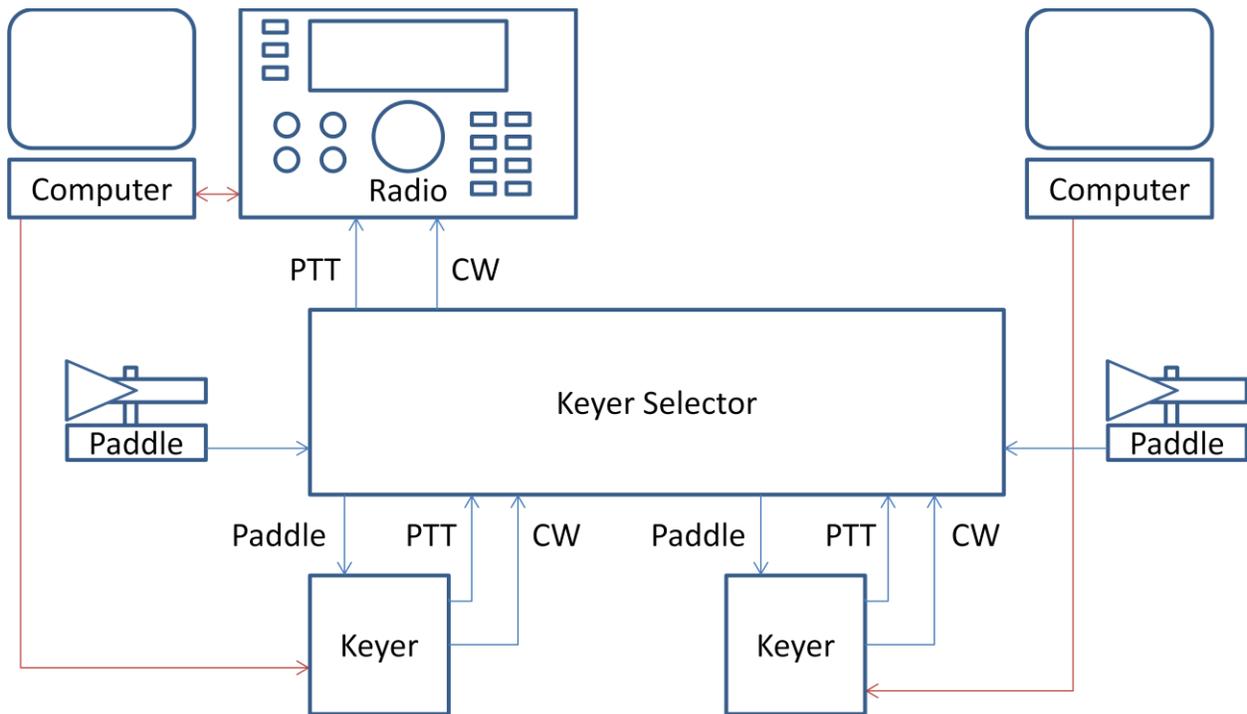
This can greatly simplify antenna switching. Radio 2 can be connected to receive-only antennas or to the switched antenna output of radio 1.

The major disadvantage of this configuration is flexibility. If radio 1 is running and radio 2 is chasing multipliers then operator 2 must set the multiplier station's frequency in radio 1. This is easiest if radio 1 has two VFOs, for example an FT-1000 series or Elecraft K3. Some of this flexibility might be retrieved if the logging program or another piece of software allowed operator 2 to set the B VFO of radio 1 to the same frequency as radio 2.

In this configuration the TRANSMITTER switch is set to BOTH or to 1.

## MO1R

MO1R uses only one radio.



If the radio has a sub-receiver one operator can listen on the main and one on the sub. Some radios allow the two receivers to use different antennas.

The operator 2 computer does not have a connection to a computer, so frequencies must be entered manually. This can be overcome with special software.

Although this configuration is the least powerful it can most easily be added to an existing station. It just requires a Keyer Selector, a keyer and paddle, and a computer which might be a laptop.

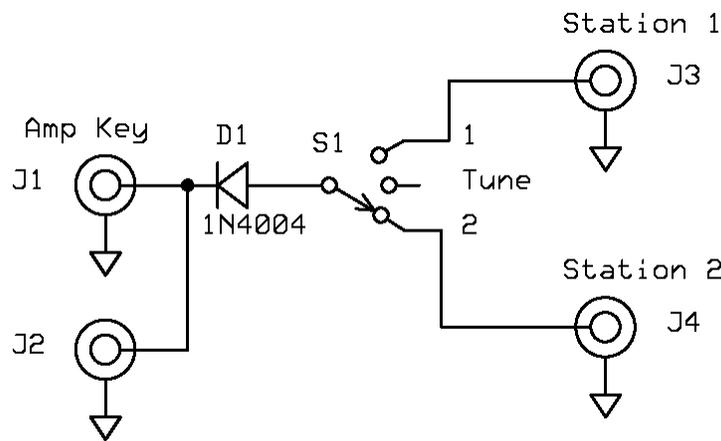
## M/2

Competitive multi-2 stations usually have three radios. The third radio is used to chase multipliers. Depending on the capabilities of the station this might be done on a different band, resulting in each multiplier using two band changes, or on a run band, in which case no band changes are used.

For this to work the multiplier station must inhibit one of the other stations. The CQ WW rules require such an interlock. The Keyer Selector has an inhibit input which can be used for this purpose.

If the inhibit input is grounded station transmit will be inhibited on both radios and the inhibit light will be illuminated.

One easy way to do this is to use the amplifier keying line of the multiplier station to ground the inhibit line of one of the other stations.

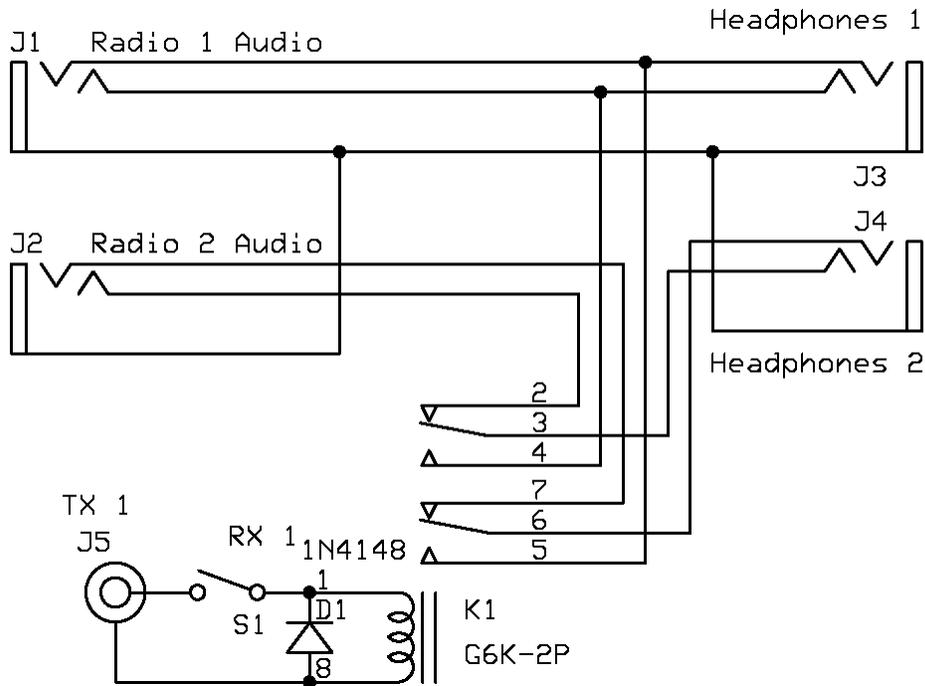


This is an example of a simple circuit which could be used to inhibit one of two Keyer Selectors. The box connects to the amplifier keying line of the multiplier station radio. The radio could be connected to J1 and the amplifier to J2. J3 and J4 go to the inhibit inputs of the Keyer Selectors. The switch determines which station should be interlocked. The Tune position is used when tuning the amplifier.

## Headphone Switching

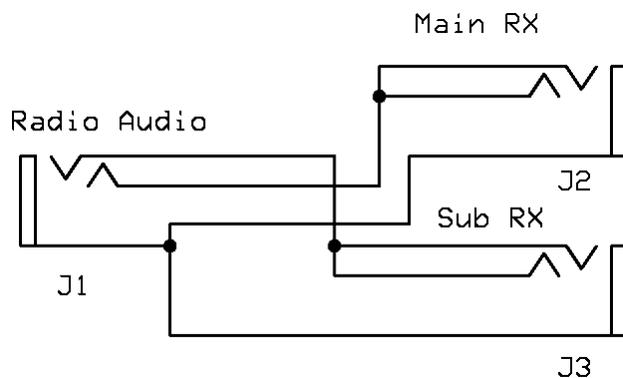
Although headphones could just be plugged into radios a headphone switch can be very useful.

When two operators are running in a MO2R or MO1.5R configuration it may be desirable to switch headphones from the non-transmitting radio to the transmitting radio so both operators hear the sidetone. This can be done by connecting a relay to the TX 1 or TX 2 outputs.



This is an example of a relay used in a MO1.5R configuration to allow operator 2 to hear the sidetone when radio 1 is transmitting. The switch allows the operator to choose whether or not to listen to the sidetone.

Many radios have a sub receiver. These radios can be set up so the main receiver is heard in the left ear and the sub receiver is heard in the right ear. In MO1R one operator can listen to the main receiver and another listen to the sub. This requires a simple headphone splitter.



It is also possible to use this in MO1.5R if the radio which transmits has a sub receiver.

It can be worthwhile to build a headphone switch with either or both of the above circuits and with the ability to switch headphones between the two radios. The useful switch selections depend on the configuration.