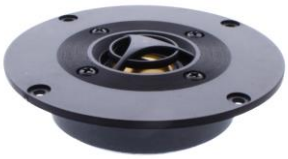
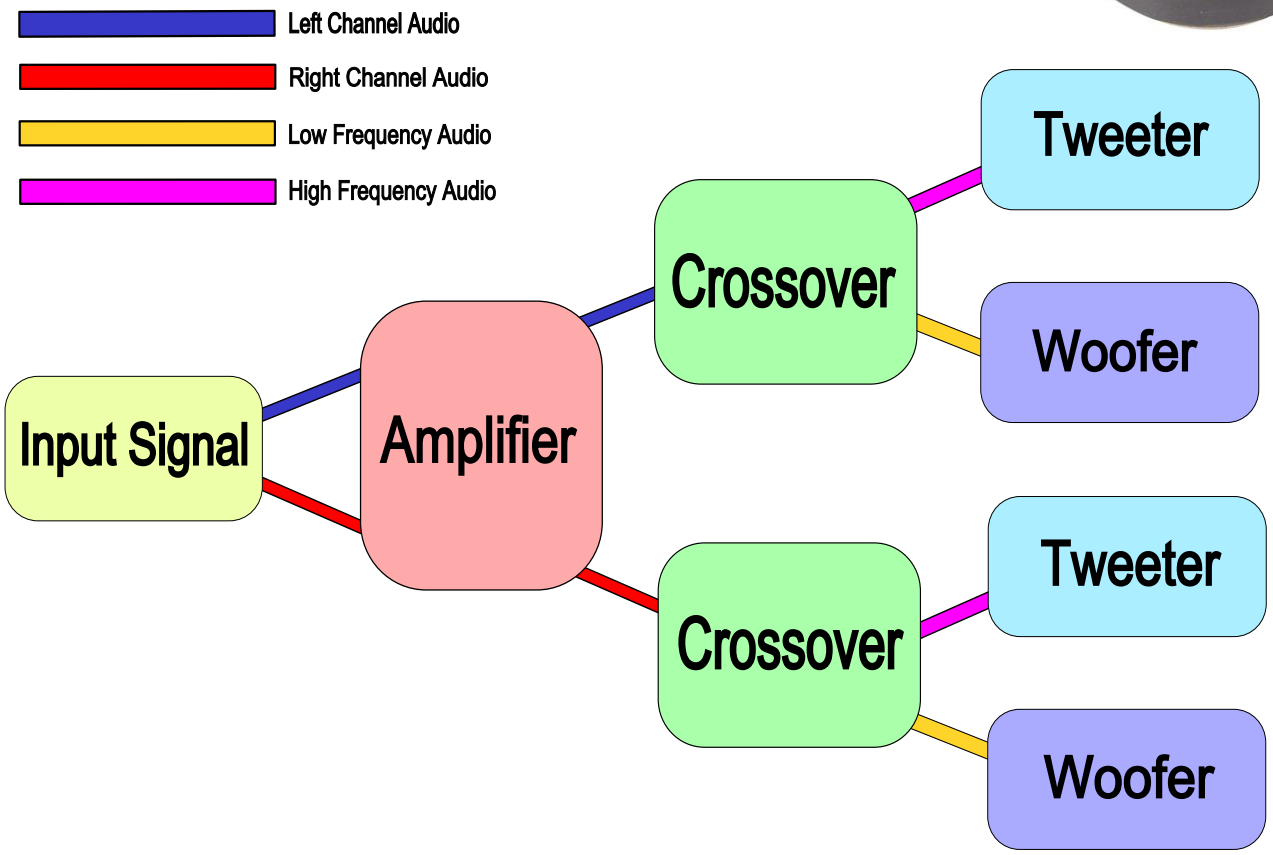
How to use a 2-Way Passive Crossover

Description

A crossover is the name given to a circuit that splits an audio signal into separate frequency bands. This allows different frequency bands of the output from an amplifier to be sent to different speakers instead of all being sent to one speaker.
The advantage of doing this is that low frequency sounds can be sent to a woofer, a special speaker designed to reproduce low frequency sound and high frequencies can be sent to a tweeter, a speaker that is very good at reproducing high frequency sounds.
The result of this is a much more accurate reproduction of the original audio source than sending the entire signal to a Full Range Speaker, which usually are unable to reproduce frequencies at the extreme ranges of audible sound.



From top to bottom the images on the right show the crossover board, a tweeter and a woofer.



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Learn how to:

- Use a 2-way passive crossover in a speaker system.
- Get the most out of your amplifier.

Level of difficulty:

- Intermediate.

Parts List

In order to use your passive crossover, you will need:

- 2 x 2-Way Passive Crossover.
- Kitronik High Power Amplifier or equivalent.
- 2 x 40W Titanium Dome Tweeter.
- 2 x 100W Kevlar Woofer.
- Suitable speaker cable rated to at least 2 Amps.

You will also need the following equipment:

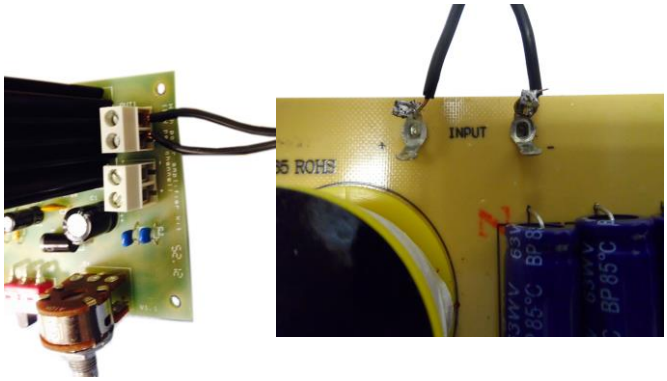
- Soldering Iron.
- Solder.
- Side Cutters or Automatic wire strippers.

Step-by-step guide to using a Passive Crossover

Step 1

Solder one end of a wire to the terminal on the crossover marked '+', this terminal can be found on the side of the crossover marked 'INPUT'. Connect the other end of the wire to your high power amp's terminal block 'OUT1' where it is marked with a '+'.

Do the same for the terminal on the crossover marked '-', this time connecting the other end to terminal block 'OUT1' where it is marked with a '-'.



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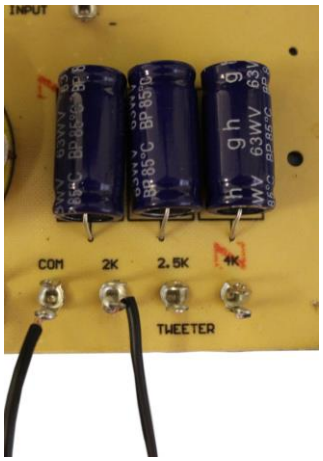
Step 2

Take the woofer and solder one end of a wire to the terminal on the woofer labelled with a '-', solder the other end of this wire to the terminal labelled 'COM' above where the word 'WOOFER' is printed on the crossover PCB.

Take another length of wire and solder it to the terminal on the woofer labelled with a '+'. The other end of this wire should be soldered to the terminal on the crossover above the word 'WOOFER' labelled '4K'.

Step 3

Solder a length of wire from the red terminal on the tweeter to the terminal on the crossover marked '2K' above the text 'TWEETER'. Solder the other terminal on the tweeter to the terminal on the crossover marked '2K' above the text 'TWEETER'.



Step 4

At this point it is a good idea to turn the high power amp on, set the volume to about half way plug the input jack of the High Power Amp into your audio source and play some music to test that everything is wired correctly. If there's no sound or it is all bass or no bass then double check your wiring as a connection is probably missing. If everything sounds good repeat this process with the other output channel of the High Power Amp, using the other crossover, tweeter and woofer.