How to connect two CD-ROM drives to one soundcard
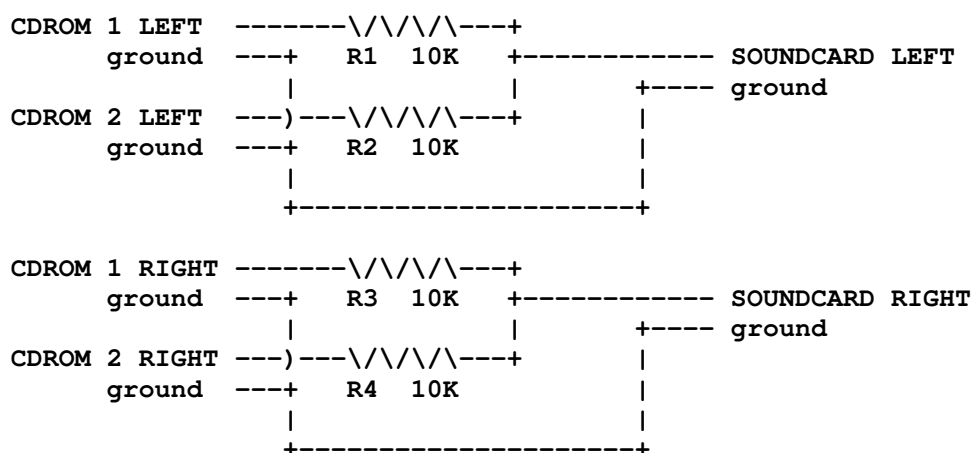
Introduction

The PC soundcards are typically designed to accept the audio signal only from one CD-ROM drive. Even if the soundcards have many types of CD-ROM audio input connectors those are just wired together and are designed to be used so that there is only one sound input in use at one time.

The first idea which might come to mind is to splice together the audio wires from those two CD-ROM drives. This might seem to work but this is not the correct way to do it. Splising two audio signal wires toether will lead to decreased audio level, incleased noise, increased distortion and in some cases damages to the equipments. So don't splice those audio signal wires directly together.

The correct way to do the connection is to use an audio mixer circuit. A professional mixing desk is very good in mixing multiple signals together. Because you might not want to spend a small fortune to get a good mixing desk and you want somethign which fits nicely inside your PC and is also easy to use you might be interrested in using something cheaper.

Circuit

This simple circuit just mixes the audio signal from two CD-ROM drives. Because of the simplicity of the mixer circuit the signal level is reduced but it otherwise works nicely. The signal attenuation can be compensated by adjusting the volum levels on your souncard control panel.

```
CDROM 1 LEFT  -------\/\/\/\---+
      ground ---+   R1  10K   +------------ SOUNDCARD LEFT
               |             |     +---- ground
CDROM 2 LEFT  ---)---\/\/\/\---+     |
      ground ---+   R2  10K        |
               |                   |
               +-------------------+


CDROM 1 RIGHT -------\/\/\/\---+
      ground ---+   R3  10K   +------------ SOUNDCARD RIGHT
               |             |     +---- ground
CDROM 2 RIGHT ---)---\/\/\/\---+     |
      ground ---+   R4  10K        |
               |                   |
               +-------------------+
```

Component list

R1-R4   10 kohm 0.25W
Necessary connectors
Wire

Building the circuit

The actual pins where to connect the component might vary a little bit from system to system.

PC specs say that the CD-ROM audio input in soundcard should have the following pinout on the molex connector:

pin 1 - left signal
pin 2 - ground
pin 3 - ground
pin 4 - right signal
When I looked at my SB16 soundacard I also found a audio connector which seemded to have the following pinout:
pin 1 - left signal
pin 2 - ground
pin 3 - right signal
pin 4 - ground

I built my own protoype so what I first bought two molex female connectors which fit nicely to the sound output of the CD-ROM drives. Then I connected suitable pices of wire to those connector. (actually I bought few cheap CD-ROM audio cables and cut out the connectors on the other end of the cable which were not needed). Then I soldered the resistors to the ends of those signal wires and shielded the solder joints with heat shrinking plastic tube. Then I soldered the other ends of te resistors to the male connector. And then I soldered the ground wires also to this connector. After I had checked the circuit with multimeter. I put larger heat shrinking plastic tube over the cirrcuit to make it completely shielded agains short circuit and also mechanically stable. It is necessary to construct the circuit so that when installed inside your PC this circuit does not cause any (costly) short circuit.

I used the same wiring on the male connector as I used with the CD-ROm connector. This contruction allwed me to use the original CD-ROM to soundcard audio cable to be used for connecting the output of this circuit to the soundcard.

Use of the circuit

When the circuit ready and tested you can just plug the cable in to your computer and use the CD-ROM audio as you did originally. Now you can put the CD disk to either of those CD-ROM drives and still always get the music out from the soundcard.