

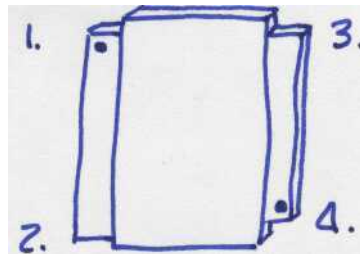
The following is information on how to construct an AI non-common ground SDA interconnecting cable. This would be for someone who already has a pin/blade connecting cable and wants to convert it to a non-common ground version. The following parts are required:

- 1). An isolation transformer such as:
SPC Technology 81N5406, 2" x 3 1/4" x 1 3/4", \$15.99 or;
Stancor 01F043, 2" x 3 1/2" x 1.8", \$20.04 or,
Magnetek Triad 03F1017, \$16.46.

These can be bought from the Newark catalogue parts company at 1-800-463-9275.

- 2). A 20' length of good quality #16 or #14 gauge speaker wire.
- 3). A Volt/Ohm meter (VOM)
- 4). Two "clip leads" (a short length of connecting wire with an alligator at both ends).

First step: the isolation transformer should have four leads coming from it; two for the primary and two for the secondary sections of the transformer. It may look like this:



Connections 1 and 2 would correspond to the primary and 3 and 4 would correspond to the secondary. In order to test this you would set your VOM to the lowest resistance setting. The meter will have a positive test lead and a negative test lead. If you touch the two leads together you should see "0" ohms displayed on the meter. Now using the meter's two leads place them on connections 1 and 2 of the transformer; you should read a low result on the meter. The same test can be done to connections 3 and 4 and find the same low reading. However, placing your meter's test leads across connections 1 and 3 or 2 and 4 should show an "infinite" resistance; no connection at all.

The second step is to take the pin/blade SDA cable, that you have, and cut it into two pieces. The cut should be made wherever you wish to have the isolation transformer inserted. Once this is done you should see the two wires inside the cable itself, one white and the other black. It is important to note that both of these wires are connected to the pin part of each pin/blade connector. Neither one of these two wires is connected to the blade; only the pin is conductive from one end of the cable to the other. However, for the operation of the isolation transformer we will have to use a separate piece of speaker wire to make this necessary connection.

Separate the two halves of the pin/blade cable into a "right" and "left" cable. Take the "left" half of the cable and remove enough of the outer insulation to expose the two wires. Cut off 1" or 2" of the black wire leaving the remaining white wire longer and remove W of the white insulation exposing the copper wire. This wire should be soldered to connection 1 of the isolation transformer. Take the #16 or #14 gauge speaker wire and cut it to the same lengths that the pin/blade cable was cut to. Take the section of the speaker wire that corresponds to the "left" piece of the pin/blade cable and remove 14" insulation from one end. This wire should be soldered to connection 2 of the isolation transformer. Now you have completed the left half of the AI cable, the pin/blade connector would go into the left SDA speaker, the other end of the speaker wire would be connected to the negative terminal of the five way binding post of the left speaker.

Now to construct the "right" half of the cable. Take the remaining length of the original SDA pin/blade cable and remove enough of the outer insulation material to expose the two wires inside. Cut off 1" or 2" of the black wire leaving the white wire longer. Remove 14" of insulation from the white wire, but don't connect it at this point. Take the remaining portion of the speaker wire and remove 14" of insulation from both ends. The next section is going to determine the proper polarity of the secondary of the isolation transformer. In order to do this you would connect your power amplifier or receiver to the left and right speaker (note: this doesn't have to be the non-common ground amplifier any power source would be fine). The right positive and negative connections of the amplifier would go to the right speaker's positive and negative binding posts. The same with the left channel of the amplifier, it would be connected to the left speaker's positive and negative binding posts.

The left portion of the "under construction" AI cable would be plugged into the pin/blade connection of the left speaker, the piece of speaker wire that is connected to terminal 2 of the isolation transformer would be connected to the negative five way binding post of the left speaker along with the negative wire of the amplifier. The same would be done to the right pin/blade connector, it would be plugged into the right speaker's pin/blade connector and the remaining section of speaker wire would be connected to the right speaker's negative binding post.

However, the other ends of these wires are not yet connected to either terminals 3 or 4. The "clip leads" will be used to determine which wire should be connected to terminals 3 and 4. As an initial test, use one of the clip leads and connect it to the white wire of the original SDA cable and connect it to terminal 4. Then take the remaining clip lead and connect the piece of speaker wire to terminal 3. Now turn your audio system on and begin playing a musical selection that is known to be a stereo signal. Such as a recently recorded CD, for example.

Make sure that there are sounds coming from all of the tweeters and drivers that make up your SDA speaker. Once this has been determined remove the negative speaker wire connections from the amplifier. Now the "stereo" portions of both the left and right speaker should not have any sound being played. However there should be sound coming from the "SDA" portions of both speakers. Note the relative strength of this sound and without touching the volume control reverse the clip leads connected to the two terminals. Note if the signal is now stronger or weaker than the previous connection. You should also listen for the "diffuse-ness" of the sound, one of the two connection arrangements should seem more diffuse or "spacey". Note the connection arrangement that produces the stronger SDA signal.

Now, that the correct polarity has been determined, the final connections can be made to the secondary section of the isolation transformer. It is important to make sure that the transformer is placed into some kind of enclosure or housing to prevent anything from shorting out the connections. The same Newark

Page3.

Company can supply metal do-it-yourself enclosures as well a local parts supply stores such as Radio Shack. All connections to the speakers and the amplifier should be well made with no stray wires. If you have any questions concerning this construction project, please telephone our Customer Service department at 1-800-377-7655 Monday through Friday 9:00 AM until 6:00 PM EST.

Sincerely, Ken Swauger, Polk Customer Service