

VC700 Impedance Matching Stereo Volume Control

To ensure you get the most out of your new speakers, please take a moment to read this manual before you get started.

The impedance matching stereo volume control is a common concept in whole-house audio installation. It is a full range volume control that can be adjusted to meet the requirements of your installation. With a simple change to the impedance matching switch, you can safely connect multiple pairs of speakers to a single amplifier (or receiver). Refer to the charts provided in this manual to determine how to set the switch to ensure the proper impedance level is sent to your amplifier.

Features and Technical Information

- Can be used with any combination of 4 ohm, 8 ohm, or 16 ohm speakers
- Impedance adjusted easily with a single switch mounted just behind the Decora-style frame- Unlike most models, you don't have to remove the entire volume control to adjust impedance
- 12 steps of attenuation: all the way counter-clockwise is completely off: all the way clockwise is completely open
- Frequency response: 20 Hz to 20kHz (+0/-2db) at rated power
- Removable green connecting strips accept up to 12 gauge wire
- Independent grounds for use with any amplifier
- Decora-style faceplate included
- Fits most plastic electrical junction boxes with a minimum depth of 3.25"

Installation Considerations

Type of Speaker Cable

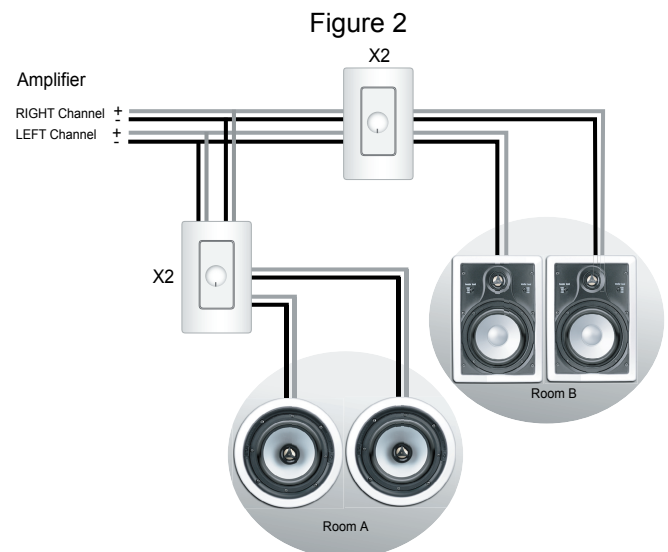
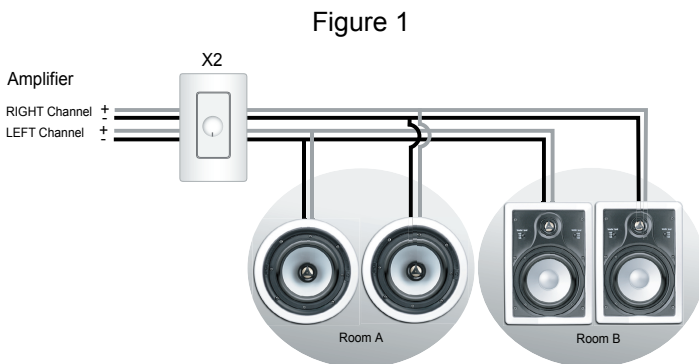
For most applications, we recommend using 14 gauge oxygen-free copper speaker cable. For individual lengths less than 75 feet, 16 gauge cable is acceptable. When running speaker wires inside walls, it is recommended that you use CL3/FT4 rated cable for better insulation from surrounding electrical cables and to conform to building codes.

Avoiding Interference

Speaker wires can act as an antenna for electrical noise. Locating the speaker cable too close to a light dimmer or switch may cause a "buzzing" or "popping" sound to be heard through the speakers. If you must locate the speaker cable near electrical devices, try to rout the cable a minimum of three feet away from the electrical wiring.

Impedance Correction

This process ensures that the impedance load shown to the receiver or amplifier never goes below the rated capabilities of the receiver or amplifier. See the charts (opposite page) for specific impedance loads that will be presented to your amplifier, depending on the quantity and impedance of the speakers you are using.



Examples: see Figure 1 and Figure 2

Figure 1 shows one impedance matching stereo volume control connected to two pair of 8 ohm speakers. Figure 2 shows two impedance matching stereo volume controls each connected to one pair of 8 ohm speakers. In both cases the impedance switches on the volume controls are set to the "X2" position. Note that it is the total number of speakers that are connected to the same amplifier that determines this position (as long as all speakers at some point pass through one volume control). The total number of volume controls is irrelevant.

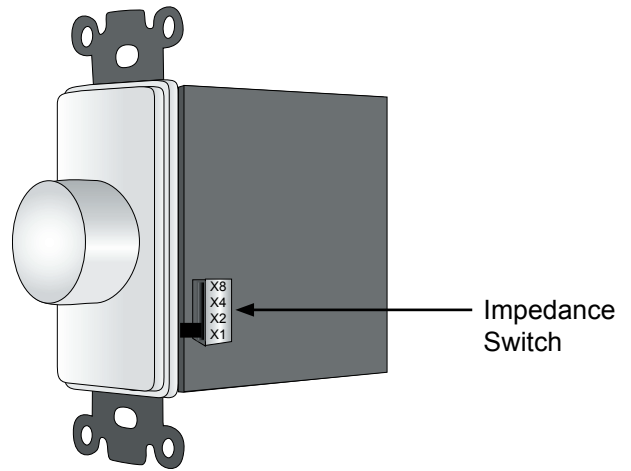
Impedance Correction Chart

x1, x2, x4, x8 = Positions for the Impedance Switch
if you are using a 4 ohm rated amplifier:

4 ohm speakers	x1	x2	x4	x8
	1 pair	2 pairs	4 pairs	8 pairs
8 ohm speakers	x1	x2	x4	x8
	2 pairs	4 pairs	8 pairs	16 pairs
16 ohm speakers	x1	x2	x4	x8
	8 pairs	16 pairs	32 pairs	64 pairs

x1, x2, x4, x8 = Positions for the Impedance Switch
if you are using an 8 ohm rated amplifier:

4 ohm speakers	x1	x2	x4	x8
	-----	1 pair	2 pairs	4 pairs
8 ohm speakers	x1	x2	x4	x8
	1 pair	2 pairs	4 pairs	8 pairs
16 ohm speakers	x1	x2	x4	x8
	2 pairs	4 pairs	8 pairs	16 pairs



Installation

1. Make sure the amplifier is turned off.
2. Select a convenient mounting location for the volume control.
3. Run one 4-conductor cable (or two 2-conductor cables) from the amplifier (for the positive and negative of both the left and right channel) to the Amplifier Inputs on the volume control.
4. Run a 2-conductor cable from the Speaker Outputs on the volume control to the left speaker(s) and a 2-conductor cable to the right speaker(s).
5. To connect the cables to the volume control:
 - a) Strip away about 2" of the outer sheath of the CL3/FT4 cable to reveal the individual conductors inside.
 - b) Strip 3/8" of insulation from the end of each conductor.
 - c) Tightly twist the wires until there are no frayed ends.
 - d) To more easily attach cables, remove the green connecting strips from the volume control, and loosen each connection using a small regular screw driver.
 - e) Insert each of the 4 conductors from the amplifier into the green Input Amplifier terminal, being careful to maintain channel (Left and Right) and polarity (+ positive to + positive; - negative to - negative). Tightly screw down each connection and then replace the green Input Amplifier terminal.
 - f) Insert each of the 4 conductors from the speakers into the green Output Speakers terminal, being careful to maintain channel (Left and Right) and polarity (+ positive to + positive; - negative to - negative). Tightly screw down each connection and then replace the green Output Speakers terminal.
6. Connect additional speakers in parallel (see Figure 1 and Figure 2).
7. Make certain that all connections between your amplifier and the volume control, and between the volume control and each speaker, are "phase correct", that is + to + and - to -.
8. Turn the volume knob to the "off" position, turn on the amplifier, and test the functionality of the volume control.



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