

QSC

AUDIO PRODUCTS

QSC Electronic Crossover 2.1 Instructions

The QSC Electronic Crossover 2.1 provides a pair of wide-range, two-way frequency splitting circuits in a single rack-mountable chassis. This unit will provide the crossover signals for a bi-amped stereo system, or a tri-amped mono system.

1. Hook-up.

Electronic crossovers are intended to be used just before the final power amp(s) in an audio system. Connect the full-range signal from the mixer, etc, to the Ch.1 CROSSOVER LINE IN. Feed the LOW FREQ LINE OUT to the power amp driving the bass speakers, and the HIGH FREQ LINE OUT to the treble amplifier. For stereo systems, hook up Ch.2 in the same manner, being careful to duplicate the hook-up and settings exactly. You may also use the two channels separately for two independent systems. Shielded cable should be used for all line-level connections.

2. Adjustments.

Set the CROSSOVER FREQUENCY control to the rated low frequency limit of your high frequency drivers. Set the power amplifier Gain controls (if any) to the maximum value, and use the HIGH FREQUENCY GAIN and the LOW FREQUENCY GAIN controls on the crossover to obtain a balanced treble-bass sound. These controls should normally be kept at about "0 dB" or higher, to assure plenty of drive to the power amps. If you are using QSC power amps, with dB calibrations, or if you know the rated gain of your own amplifiers, you can set the High and Low Gains "by the book". Find the rated sensitivity of your horns and speakers, and compensate for the difference by adjusting the dB values of the High and Low Frequency Gains. Typically, the bass drivers will require a few dB extra gain (as well as more amplifier power). The CROSSOVER PHASE Switch should be set in the position that gives the most natural "joining" of the highs and lows.

3. Fine-Tuning.

The human ear is actually the most sensitive judge of correct settings. The CROSSOVER FREQUENCY may be increased, if necessary, to yield a clean, unstrained sound from the horns. Set the HIGH FREQUENCY GAIN on "0 dB", and bring up the LOW FREQUENCY GAIN until the bass matches up in volume with the treble.

4. Three-Way Operation.

By using both channels, you can obtain three-way frequency splitting. Feed the full-range signal into Ch.1 CROSSOVER LINE IN, and set the Ch.1 CROSSOVER FREQUENCY for the desired bass-midrange value. Connect the Ch.1 LOW FREQ LINE OUT to the bass amp. Set Ch.1 HIGH FREQUENCY GAIN on "0 dB", and connect Ch.1 HIGH FREQ LINE OUT to Ch.2 CROSSOVER LINE IN. Set Ch.2 CROSSOVER FREQUENCY to the desired midrange-treble value. Connect Ch.2 LOW FREQUENCY LINE OUT to the midrange amplifier, and Ch.2 HIGH FREQ LINE OUT to the treble amp. Use Ch.1 LOW FREQUENCY GAIN to adjust bass volume; Ch.2 LOW FREQUENCY GAIN to adjust midrange volume, and Ch.2 HIGH FREQUENCY GAIN to adjust treble volume.

5. Precautions.

Be sure that your power amplifiers are reasonably well-matched to the power ratings of your various drivers, for less chance of overdriving and damage. When turning the system on or off, there may be "thumps" as the various components come on. To prevent horn damage, put the power amp gains on minimum until everything has been turned on. Another highly recommended precaution is the use of "horn protection capacitors". The value should be set to cut-off frequencies one octave below the crossover frequency, for protection without affecting the rated frequencies. Typical values, for 8-ohm horns, are shown below. Use half the value for 16-ohm horns; all units at least 50volts NON-POLAR.

500Hz;80uf. 800Hz;50uf. 1.2KHz;32uf 2KHz;20uf 4KHz;10uf. 6KHz;6uf.