

KRK Subwoofer placement and setup guide

The basics of subwoofer placement

A properly set up subwoofer system extends the bass response of the main monitors (either stereo or 5.1 surround) without exaggerating bass response in the room. Improper set up may cause an exaggeration of bass response in the room, which in turn may cause the engineer to mix in less bass energy than desired.

It is widely accepted that frequencies below 100Hz are generally omni-directional, which is to say it is almost impossible to determine the point of origination in any given space. What is less well known is that the geometry of a room, and the objects within, can greatly affect how the subwoofer will react. Here are some details to keep in mind for proper subwoofer placement.

- Keep the subwoofer as near as is practical to the satellite speakers. This will reduce possible interference from time alignment issues.
- Keep the subwoofer away from corners and walls if possible. While the effects of proximity to solid surfaces can be overcome, it is often best to avoid those situations completely.
- One of the easiest ways to determine the ideal placement of a subwoofer is to start with the subwoofer in the main listening position and move yourself around the room. Where the bass sounds smoothest, or most prominent, is usually a good spot to start with for placing the subwoofer.
- Once you have the subwoofer in a place where it makes sense, sit in the main listening position and listen for the bass response. Move the subwoofer around by about a foot (30 cm) at a time until you find the place where the low end sounds the smoothest.

Subwoofer volume and phase alignment

The next step is to configure the subwoofer volume and phase settings for your system. Here are some step by step instructions:

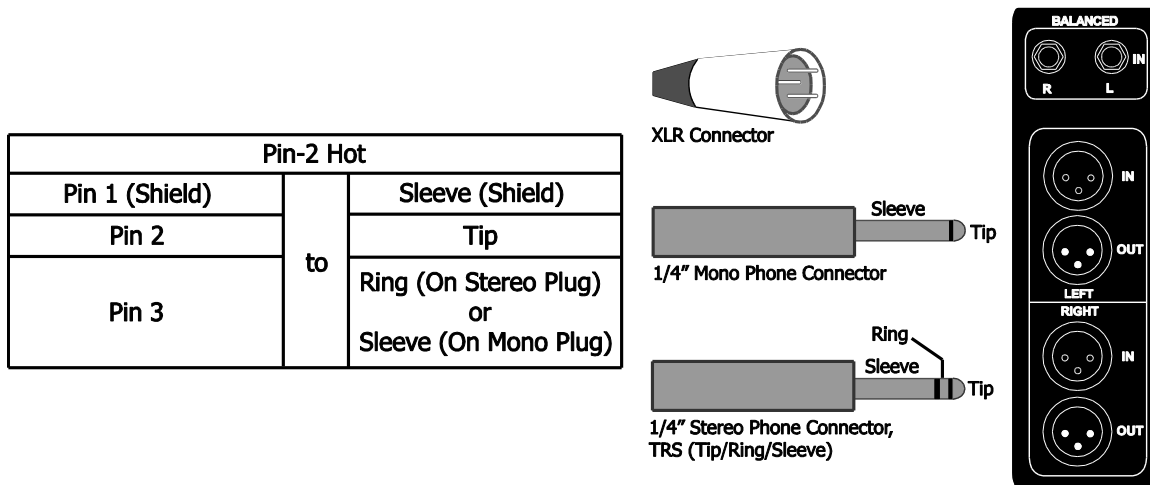
- Start with your subwoofer crossover set to around 80Hz.
- Next, route a band-limited pink noise tone through the system, including the satellite speakers (these test tones are available on the KRK website – see the download link on the next page). 500Hz-1kHz will allow you to set the volume of the satellites without exciting the subwoofer. Using an SPL meter (or smartphone app), set the overall volume so that the level is something comfortable - around 85dB should suffice.
- Run another band-limited pink noise tone of 35Hz-70Hz through the system and set the volume on the sub to where it's hitting 85dB on the meter.
- Set the low pass crossover to the highest setting (near 130Hz). Run a band-limited pink noise tone from 60Hz-120Hz, and from the listening position determine if 0 or 180 on the phase switch is loudest. Leave the switch in the loudest position.
- If your subwoofer has a variable phase knob, run a 70Hz test tone through the system. Flip the phase switch to either 0 or 180, whatever the opposite of the setting in the previous step, and adjust the variable phase until the bass level is quietest. Then flip the phase switch back to the previous setting.
- Finally, listen to some music you are familiar with and set the crossover level to a position where you only hear lows and no mid frequencies from the subwoofer. A commonly accepted practice is to double the lowest frequency that the satellite speakers are rated for and use that as the crossover frequency.

Download subwoofer test tones

www.krksys.com/krk-media-downloads.html

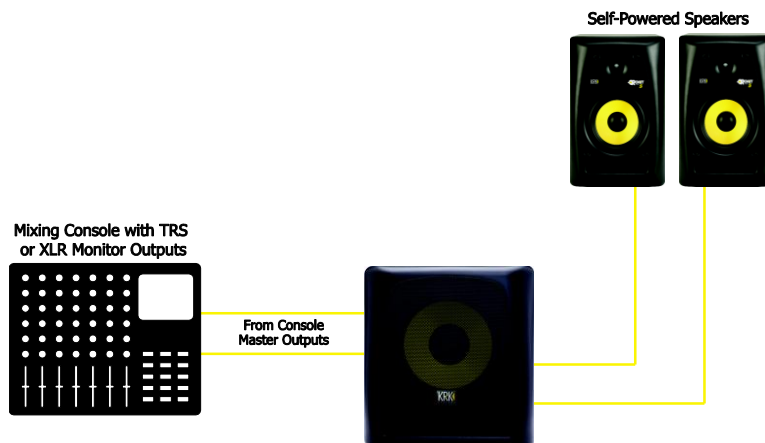
Hooking up your subwoofer

KRK subwoofers include a built-in crossover and amplifier, so you only need the appropriate cables to integrate it into your existing monitor system. First, you'll need to connect a pair of cables from the stereo monitor outputs of your console (or audio hardware device) to the left and right XLR, 1/4" or RCA input jacks on the subwoofer. Next, if you are using the internal 80Hz high-pass filter in the subwoofer for the existing full-range monitors (and most of you will), connect the left and right XLR or RCA (or TRS on the KRK 12s or 12sHO) output jacks on the subwoofer to the corresponding inputs of your powered full-range speakers or stereo amplifier.



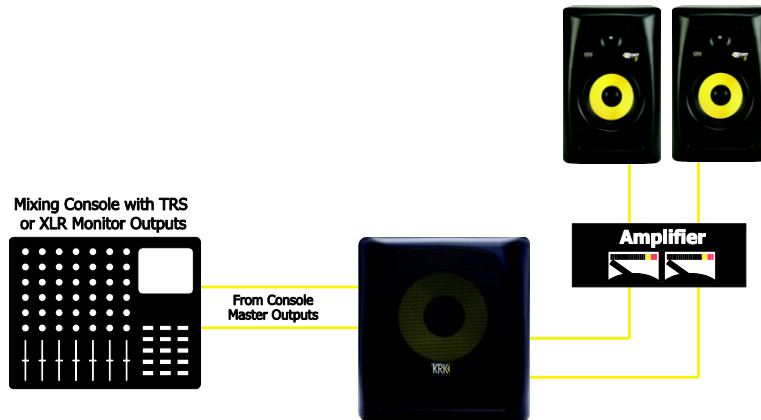
Hooking up your subwoofer: active monitors

If you are using active (powered) monitors, you'll first need to connect a pair of cables from the stereo monitor outputs of your console or audio hardware device to the left and right XLR, 1/4" or RCA input jacks on the subwoofer. Next, simply use XLR or RCA (or TRS on the KRK 12s or 12sHO) cables to connect the outputs of the subwoofer to the inputs of your monitors. The output marked "left" should go to your left monitor, and the output marked "right" should go to your right monitor.



Hooking up your subwoofer: passive monitors

If you are using passive (non-powered) monitors that require an external amplifier, you'll first need to connect a pair of cables from the stereo monitor outputs of your console or audio hardware device to the left and right XLR, 1/4", or RCA input jacks on the subwoofer. Next, connect the outputs of the subwoofer to the corresponding inputs of the stereo amplifier. Typically, this connection would be an XLR connector, but you can use the RCA or TRS outputs on the subwoofer if the sub and amplifier are similarly equipped. Connect the passive monitors to the power amplifier as you normally would. Do not attempt to connect the speaker output of the monitor amplifier to the input of the subwoofer – by doing so you run the risk of damaging the equipment.



Hooking up your subwoofer: receivers and mixers with dedicated outputs

If your mixer or receiver has a dedicated subwoofer output, which may be labeled "Sub" or "LFE", you can simply connect that output to one of the inputs on the subwoofer, using whichever input jack is most suitable. "LFE" stands for 'low-frequency effects' and sends filtered low-frequency signals that does not require the built-in crossover on the KRK subwoofer. In this case, set the built-in crossover to the highest frequency point and allow the mixer or receiver filter do all the work.

- Modern receivers may have an auto-calibration feature that requires a specific subwoofer setup. Consult the receiver's manual.
- Be aware that the receiver's subwoofer outputs may work exclusively with multichannel sources only. This means stereo content may not utilize the subwoofer. Consult the receiver's manual.



www.krksys.com

KRK SYSTEMS, a member of the Gibson family of brands.
KRK SYSTEMS 1-800-4GIBSON (1-800-444-2766)

This document is copyright protected. No part of this manual may be copied or reproduced in any form without prior written consent from KRK SYSTEMS. KRK SYSTEMS shall not be liable for operational, technical, or editorial errors/omissions made in this document.