

Setting up subwoofers

In order to properly setup multiple subwoofers some measurements are required. The measurements are very simple to perform and not critical, but some idea of how the subs and mains work in-situ are required.

The equipment required is simply a mic, mic preamp and a PC. The mic can be anything, but I recommend the Behringer ECM8000 (<http://www.behringer.com/EN/Products/ECM8000.aspx>) and this simple preamp MIC800 (<http://www.behringer.com/EN/Products/MIC800.aspx>). These are very inexpensive components that are well worth having.

The software is free and available at (<http://www.holmacoustics.com/holmimpulse.php>). This software is fairly simple to use and also an excellent bargain. The user should experiment with this system a little bit before attempting to make the final measurements.

The first measurement that is required is to get a baseline for the mains. This is done with a mono signal, i.e. drive both channels simultaneously with Holm. The volume setting is not critical, but once the system is setup and the measurements start it is important to not change any gains anywhere. Doing so will negate the relative calibration that exists if nothing is changed. The gains that I will supply will all be relative to this gain setting. Again, it makes no difference what this volume setting is, only that it not change throughout the measurement session. If the system overloads at some later measurement and you are required to change the gains to prevent overload then the entire set of measurements must be redone. This is the price of not having an absolute calibrated system.

Almost without exception the mains will be the loudest signal and once the gains of the mic preamp, Holm and power amps are set they will most likely not be overloaded by any of the subs. The mic gain should be such that a signal is noted but not so high as to cause a major motion of the signal meter. Holm is set so that it has a signal level not less than -10dB full scale (as shown on the bottom left of the main form).

Once you have a single measurement of the combined mains, you need to consider taking more than one seating location. This is not critical to do, but it is strongly recommended to take a center left and right seating location, but stay somewhat near the center of the room. You should now have three measurements at three different locations. You can run all the speakers and then move the mic, or run a speaker and move the mic and then run another speaker. You only need to be near the locations from test to test, the absolute location is not critical. It's the average that counts not the precise location.

Now do the sub closest to the seating location, although this too does not matter much. Take the three (or whatever) measurements and move on to the next sub.

The order does not matter, but labeling the curves will be critical. Call them main1, main2, main3, sub11, sub12, sub13, sub21, etc. for each measurement. Most likely if you have two subs you will have nine curves. The Holm data set is then saved using the Save measurements (wav, zip, archive) option. This file is then sent to me and I will send back the parameters for a Behringer DCX2496 processor.