Subject: Low Pass
Posted by Barryso on Thu, 14 Nov 2019 13:39:07 GMT
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Discovered some very weird component matching issues when adding subs to the system.

My plate amp is mono and if you cross it over at 100 hz it sounds odd as mono doesn't work quite right at that frequency. Borrowed a Crown amp and some 100hz 2nd order low pass fmods to use the subs in stereo.

The fmods evidently do something weird with impedance. Simply putting the fmods on the rca plugs (the rca's that will be plugged into the sub amp) dramatically lowers the volume of the main speakers. There's also a frequency shift and the highs and lows seem to just vanish.

This happens before the cable and fmods get plugged into the sub amp. Just putting the fmods on the end of the RCA cable is enough to do it.

The tube preamp has a 200 ohm output impedance going into a solid state amp with a 10k input impedance. The same ugly trick happens when using a solid state preamp with an output impedance of less than 1 ohm. Perhaps it isn't quite so dramatic with the solid state preamp but it's still enough of a change to make the fmods useless.

The borrowed amp is a Crown XLS that has a built in 4th order crossover. The internal crossover is FAR better sounding than the fmods but it doesn't have the preferred 2nd order low pass.

So it's time for plan b. Parts Express has a speaker level crossover that's 100 hz lowpass and is 2nd order. How about a pair of these with a volume pot connected to the speaker outs of a nice Texas Instruments class d amp? Would it make a good sub amp? By putting the crossovers and volume control on the output side of the amp it should bypass the preamp/amp impedance issues.

https://www.parts-express.com/parts-express-100-hz-low-pass-8-ohm-crossover--266-446#lblProductDetails

Has anyone used these or have any idea of their sound quality? Is this a plan or is there a gotcha that I'm not considering?