Subject: Re: Active vs. Passive Crossovers
Posted by Wayne Parham on Wed, 21 Dec 2011 05:29:45 GMT
View Forum Message <> Reply to Message

Active crossovers are great, and offer several advantages. However, the problem is, just going active doesn't assure the DIYer of success. The crossover still has to be designed for the acoustic solution, which is not trivial. I see far too many DIYers assume that they can roll their own easily, by "dialing it in" without doing any real homework. This won't give a good result.

I have designed several loudspeakers with passive crossovers. These crossovers can be implemented actively (and in fact are during development), but the crossover I provide to the customer is passive. The truth is that 90% of my customers want a passive crossover, so that must be done, and it must be done right. That is what I provide.

For the occasional DIYer that wants to go active, I am obliged to warn them that they can't just put any old active crossover with the same crossover points in the system and expect it to work as well. It won't. The transfer function has to be matched, and that is something most general purpose active crossovers won't do. They tend to provide textbook filters only, and this just won't do.

So the long story short is, sure, active is great but only if you do the homework. It isn't a sure deal.

Here is a write-up on what things must be considered when designing a crossover. It's just one loudspeaker configuration - the matched directivity speaker aka waveguide. But it will give you an idea what things must be done for a fully-optimized loudspeaker:
Notes for the DIYer