Subject: Panel Resonance
Posted by Adrian Mack on Tue, 14 Oct 2003 20:22:56 GMT
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Hi Guys,This is probably one of the easiest topics around. I'd just like to know though, what do panel resonance show up as? Do they look like the spikes in the freq response like "port resonance" looks like? (which I asked about rather recently). If so, is this the only thing they do? (besides corresponding phase change). With MDF, we consider that pretty good. Bracing shifts the panel resonance up to a higher frequency. Is it the stiffness of the material, or the absorbtivness that dictates weather or not its going to make a non-resonant enclosure? I'm thinking of it like an acoustically dead room where the walls absorb so it doesn't reflect. I'm thinking that inside the box its much the same thing, but then again I'm thinking the stiffness of MDF might be why its got a pretty high panel resonant frequency. Steel on the other hand is stiff, but I'd guess that wouldn't be good for subwoofer enclosures (besides the difficulty in building something from 1" steel or something!). Steel subwoofer box might ring like a metal horn?On the other hand - we have hardwoods too. I don't like this because of possible voids, and apparantly it lacks "dimensional stability" to quote Audio Concepts. Would hardwoods also have a lower panel resonance frequency>? I'd guess that too, because I'm guessing the wood particles arn't as jumbled up as they are in MDF where they point in all different directions so hardwood isn't as strong as MDF. Although I did wonder why hardwoods are used in house structures so they must be strong somewhat... perhaps they are not as strong in large sheets though? BTW: Is there any way to calculate the frequency when panel resonance is going to start?Thanks!Adrian