Subject: Re: Time alignment
Posted by Wayne Parham on Wed, 24 Dec 2003 15:43:32 GMT
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You guys are definitely on the right track here, at least in my opinion.I like to discuss ways to limit anomalous behaviour rather than to discuss time alignment. It may seem at first to be splitting hairs, but the reason to me is plain. There is no way to time align speakers using today's technology. I'm not talking about baffle-mounted speakers vs. those arranged with specific placement. When I say "today's technology," I'm also talking about speakers that employ careful placement of drivers and crossover slopes. Even those fail to achieve true time alignment.The reason is that the electronics, the cabinet and even the drivers themselves are partially reactive and partially resistive. They exhibit complex phase behaviour that moves around. You can't find a speaker that is perfectly resistive (zero degrees) or even perfectly reactive, having a fixed angle of phase shift. Nor can you find a design that has a set, fixed delay, like maybe what could be corrected with baffle offset or digital delay device. Everything is moving around with respect to frequency and position.That's why I like to discuss ways to minimize anomalous behaviour. You can make design choices that optimize performance at a specific location or field of operation. Such design choices usually limit dispersion and frequency overlap between adjacent subsystems so that phase between subsystems is close. That won't provide perfect time alignment, but it will keep the system from generating nulls in the target listening area.