Subject: Re: Can't reproduce a square wave
Posted by Tom Danley on Thu, 18 Mar 2004 02:55:58 GMT
View Forum Message <> Reply to Message

Hi WayneIt can be argued as you have in the past that in the home, a sound reproducer that preserves the waveshape of the input signal is not strictly necessary.In sound cancellation however the exact waveshape must be produced if it is to cancel an offending noise. I have built transducers for this application as well and am familiar with what is involved.It would seem the question of how much a speaker can screw up waveshape or corrupt the time element and still be listenable is separate from the conditions needed for preserving a complex input.Your "creating a differentiated pulse" issue with this at low frequencies is based on an incorrect assumption. Radiating into space, the radiator motion (for a direct radiator) that produces an acoustic square wave is a triangle motion, not a physical square wave.It is the radiator volume velocity that produces pressure and as long one is about 10 X higher than the low cutoff (owing to the requirements to have a good looking square wave), there is no problem going down in frequency and radiating a "square wave" assuming the flat pressure and phase region had sufficient bandwidth.(at least from the stand point of having made acoustic sources systems which preserve waveshape down into the single digits)Cheers,TomAre you going to NSCA?