

---

Subject: Re: Flutter Echo

Posted by [Wayne Parham](#) on Sat, 23 Oct 2010 17:20:42 GMT

[View Forum Message](#) <> [Reply to Message](#)

---

I find HF "slap" (or multiple slaps, i.e. flutter echo) to be a problem in rooms with a lot of hard surfaces and little furniture or carpeting. Fortunately, most people don't set up their sound systems or home theaters in rooms like that, although I can recall one room with hardwood floors that did it very badly.

Obvious stuff helps a lot. Bookshelves placed on the opposite wall from the mains provide a natural diffusion that breaks up the rear reflection. Using directional speakers and toeing them in helps reduce side reflections. Carpeting helps reduce reflections from the floor, at least at frequencies above the modal range. That only leaves ceiling slap and my best advice there is the same as what you do to reduce side reflections - use directional speakers - with limited HF output at large vertical angles.