



Dear Fellow AV Professional,

Thanks in advance for your participation in the upcoming Home Acoustics Alliance Seminar. As part of our efforts to make the training as useful as possible we've included a pre-test to give you a chance to test your acoustic knowledge and to do a little preparation.

Upon the completion of the seminar you'll be eligible to take our online certification test. Based upon your class participation and successful completion of that test you'll be a member of an elite group; an HAA Certified Home Theater Calibrator.

I'm looking forward to meeting you and have fun with the test!

Gerry Lemay  
Director

# HAA<sup>™</sup> Self Test

Home Acoustics Alliance

1. What is the best technique to reduce a peaking bass mode at the listener's position?
2. The process of tweaking a speakers toe-in, distance from back and side walls and listener position is a time honored skill in the world of hi-end audio; what acoustical properties are you changing with each of these movements?
3. Good sound is subjective on most levels, what sonic attributes can we all agree are necessary for the best results? Can these be measured by instruments?
4. What is the optimum number of acoustical panels to use in a home theater?
5. Why do bass levels change as we move from location to location in a small room? Where in most rooms is the best bass usually heard?
6. How does understanding the difference between the reverberant field and near field allow us to make home theaters sound better?
7. How do you determine if a tonal balance problem is a result of faulty equipment, set-up or caused by the room... in less than 10 seconds?
8. Explain how the best reference level for a home theater system is determined and what its significance is?
9. When would we not use 85 dB as our reference as Dolby and THX recommend? If not 85 dB what then?
10. How do "Bass Absorbers" work? Why is the corner not necessarily the best location for some types?
11. What are 1<sup>st</sup> reflections and how do they affect imaging? Tonal balance? Bass response?
12. Why is the clapping of hands in a room not necessarily a good indicator of problems?
13. When do we use the subwoofer phase switch or more succinctly why?
14. What is the most effective way to increase the dynamic range of a home theater without increasing the power of amps or sensitivity of the speakers?
15. Why should we care where a soundtrack or recording is mixed down? How does this information affect our sound room design?

16. How does one minimize Speaker Boundary Interference Response (SBIR) distortions?
17. Positioning a listener in the null of a mode usually causes a dip in response centered at the mode frequency. Why is equalization usually not a cure and why?
18. What is Energy Time Analysis and how can it be useful in theater calibration?
19. Sonic diffusers and acoustical treatments are not very effective at frequencies below 250 to 500 Hz; why then could a listener still experience an improvement in perceived bass response when such treatments are added?
20. Why do subwoofers sometimes seem to be adjusted too high after being set up using test tones and a sound pressure meter? What is the best way to set a sub's level?
21. Why should you never place a listener directly in the center of a rectangular room? Where *does* the bass sound the best and how do you locate this position most efficiently?
22. How are small room acoustics different from large room acoustics?

