

Adjusting ACI Subs Using the ACI Test CD



- 1. By Ear:** Use the test tones, (most people prefer the sinewaves), to try to achieve the smoothest system response. Note, you will find very different results by just moving your head. This is because of the very strong effects that room modes have on low frequencies.
- 2. Using the Radio Shack SPL meter and Excel spreadsheet:** This method is relatively easy, inexpensive, and quite accurate. You must have Excel on your computer to be able to load and use the spreadsheet. It can be rather time consuming compared to methods four or five.
- 3. Using the Radio Shack SPL meter and hand plotted graphs:** Very similar to #2 but you'll have to do a little math when hand plotting.
- 4. Using a test system such as ETF, CLIO or MLSSA:** If you have this type of equipment you can run the measurements quickly and accurately. Usually the most expensive option. Most of these instruments are extremely powerful and can have a relatively steep learning curve. Separate measurement microphone and possibly microphone pre-amp will also be required.
- 5. Using a RTA (Real Time Analyzer):** This is probably the fastest method as you can see the results of your adjustments on-screen, in real time. RTAs used to be quite expensive. Computers with soundcards have drastically changed that! An excellent RTA can be found at: www.trueaudio.com. Separate measurement microphone and possibly a microphone pre-amp will also be required.

The Steps

1. We provide both sine waves and warble tones. Many people prefer sine waves for listening tests and warble tones for using the SPL meter.
2. Insert the test disc in your CD player. Position the SPL meter at head height in the primary listening position. The meter should be aimed toward the speakers. A camera tripod can be used as the SPL meter has ¼ -20" threaded insert on the bottom.
3. Set the SPL meter to "C" weighting, and response to slow.
4. Start with the system volume turned down. Play a 60Hz warble tone and adjust the subwoofer volume to read 70dB on the SPL meter.
5. Download the "Subwoofer One" MS Excel worksheet*. Go to:
<http://www.audioc.com/library1/testcd/testcd.htm>
6. Play the warble to tracks, read the measurements, and record in the spreadsheet. The spreadsheet will make the calculations and show you a graph.
7. Using the graph, you can now use the controls on your sub or experiment with placement to get the smoothest possible response.

* If you don't have Excel, you can print the other PDF Subwoofer Worksheet out and do manual calculations. Your steps will be the same as above. However, for steps five and six you will need to manually plot your graph. Be sure to add or subtract the required correction for the meter.

ACI Subwoofer Setup Disc

Track	Frequency	Type	Length	Track	Frequency	Type	Length
1		Pink Noise	5:00				
2		White Noise	5:00				
3	1KHz	Sine	1:00	34	1KHz	Warble	1:00
4	15Hz	Sine	1:00	35	15Hz	Warble	1:00
5	17.5	“ ”	1:00	36	17.5	“ “	1:00
6	20	“ “	1:00	37	20	“ “	1:00
7	22.5		1:00	38	22.5		1:00
8	25		1:00	39	25		1:00
9	27.5		1:00	40	27.5		1:00
10	30		1:00	41	30		1:00
11	32.5		1:00	42	32.5		1:00
12	35		1:00	43	35		1:00
13	37.5		1:00	44	37.7		1:00
14	40		1:00	45	40		1:00
15	45		1:00	46	45		1:00
16	50		1:00	47	50		1:00
17	55		1:00	48	55		1:00
18	60		1:00	49	60		1:00
19	65		1:00	50	65		1:00
20	70		1:00	51	70		1:00
21	75		1:00	52	75		1:00
22	80		1:00	53	80		1:00
23	85		1:00	54	85		1:00
24	90		1:00	55	90		1:00
25	95		1:00	56	95		1:00
26	100		1:00	57	100		1:00
27	110		1:00	58	110		1:00
28	120		1:00	59	120		1:00
29	130		1:00	60	130		1:00
30	140		1:00	61	140		1:00
31	150		1:00	62	150		1:00
32	175		1:00	63	175		1:00
33	200		1:00	64	200		1:00

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