

How to use the AceBass calculation sheet

Step 1.

Insert the thiel small driver data on the driver you want to use:

Input white values

	Normal Driver	AceBass Driver	Unit
Cms	1,0166	0,6	mm/N
Mms	18,5	80	g
Rms	1,5239	30	kg/s
Re	6,1	6,1	Ohm
Bl	5,9	5,9	Tm
Sd	140,6	140,6	cm^2
Fs	36,7	23,0	Hz
Qes	0,75	2,02	
Qms	2,80	0,38	
Qts	0,59	0,32	
Vas	28,5	16,8	liter
p	1,184	1,184	kg/m^3
c	346,1	346,1	m/s

Step 2.

Insert the new parameters you want to obtain with the AceBass circuit ... the "new" AceBass driver's thiel small parameters.

Input white values

	Normal Driver	AceBass Driver	Unit
Cms	1,0166	0,6	mm/N
Mms	18,5	80	g
Rms	1,5239	30	kg/s
Re	6,1	6,1	Ohm
Bl	5,9	5,9	Tm
Sd	140,6	140,6	cm^2
Fs	36,7	23,0	Hz
Qes	0,75	2,02	
Qms	2,80	0,38	
Qts	0,59	0,32	
Vas	28,5	16,8	liter
p	1,184	1,184	kg/m^3
c	346,1	346,1	m/s

Hint:

Look at how the different parameters will influence each other + keep an eye on the Butterworth B6 alignment with the new driver ... this will give you a hint of what resonance frequency and box volume to expect.

Effects on modifying parameters:			
	Fs	Qts	Vas
Cms ↓	↑	↑	↓
Mms ↑	↓	↑	→
Rms ↑	→	↓	→

Use this as a guideline:  
B6 alignment  
Fb 21,3  
Vb 7,21

### Step 3.

Use WinISd to simulate the new AceBass driver in a bass reflex box, and see whether it now fits your requirements and expectation.

Remember that nothing is for free. AceBass will require more power, and you can't expect a 6" unit to perform as an 18" unit no matter what you use for circuit. But it will give a lot more output than compared to a Linkwitz transform in a closed box.

If you don't find the result in the simulation to fit your expectation, than go back to step 2.

### Step 4.

Use one of the two calculation sheets for the 2 different circuits. I used the first for my prototype



If necessary (to get resulting values which are close to standard values or to change the overall gain), change the input values:

9	R4	0,1	
0	Rg	22000	
1	Ra	330000	
2	R5	8200	
3	R6	22000	
4	G	55,9	
5	G [db]	34,9	
6			Input standard values.
7	R1	27000	
8	R2	27000	
9	R3	56000	
0	R7	2200	
1	R8	51000	
2	C1	2,20E-07	
3			

(Don't change the gain A44 and A45 ... it is calculated 😊 ... and should have been gray!)

Otherwise you'll have your result in the gray box

	Rrs	2,24E+03	
	Ccp	3,33E-08	
	Rrp	6,49E+04	
	Rlp	2,19E+05	
			Resulting values (red marked in schematics)