My two-way bookshelf project

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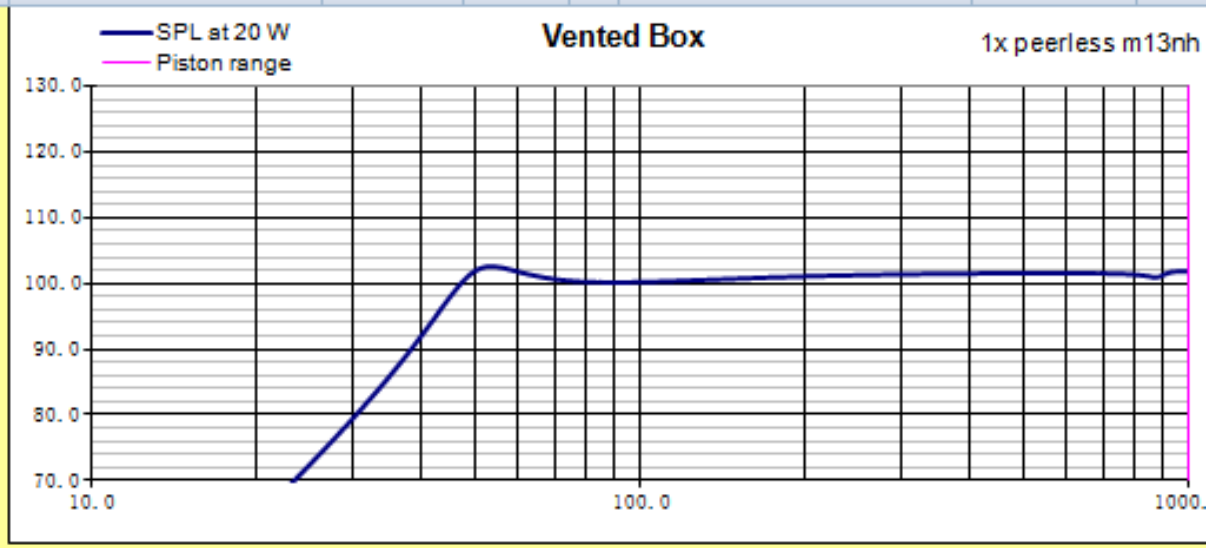
Drivers

- Tweeter: peerless TL26SG
- Fs:596Hz
- Sensitivity 94dB
- Impedence 6Ohm

- woofer: peerless M13NH, 5.25 midbass
- Fs:69.54
- Sensitivity 89.8dB
- Impedence 4 Ohm

Unibox Simulations

Vented Box	
Port	
No of ports	1
Inside port dia.	7.00 cm
Port area	38.48 cm2
Port end correction	0.646
Standard Design	
Vb	10.3 l
Fb	63.64 Hz
F3	61.31 Hz
Port min dia.	5.49 cm
Port length	23.18 cm
Design by Vb, Fb and Q	
Physical Vb	20.0 l
Absorption, Qa	20
Leakage, Ql	30
Port, Qp	120
Alpha, a	0.366
Vb	21.2 l
Fb	52.70 Hz
F3	45.71 Hz
Response peak	0.77 dB
Peak at	53.95 Hz
Port min dia.	5.71 cm
Port length	15.17 cm
Port 1. resonance	886 Hz
Include effect of port resonance	☑



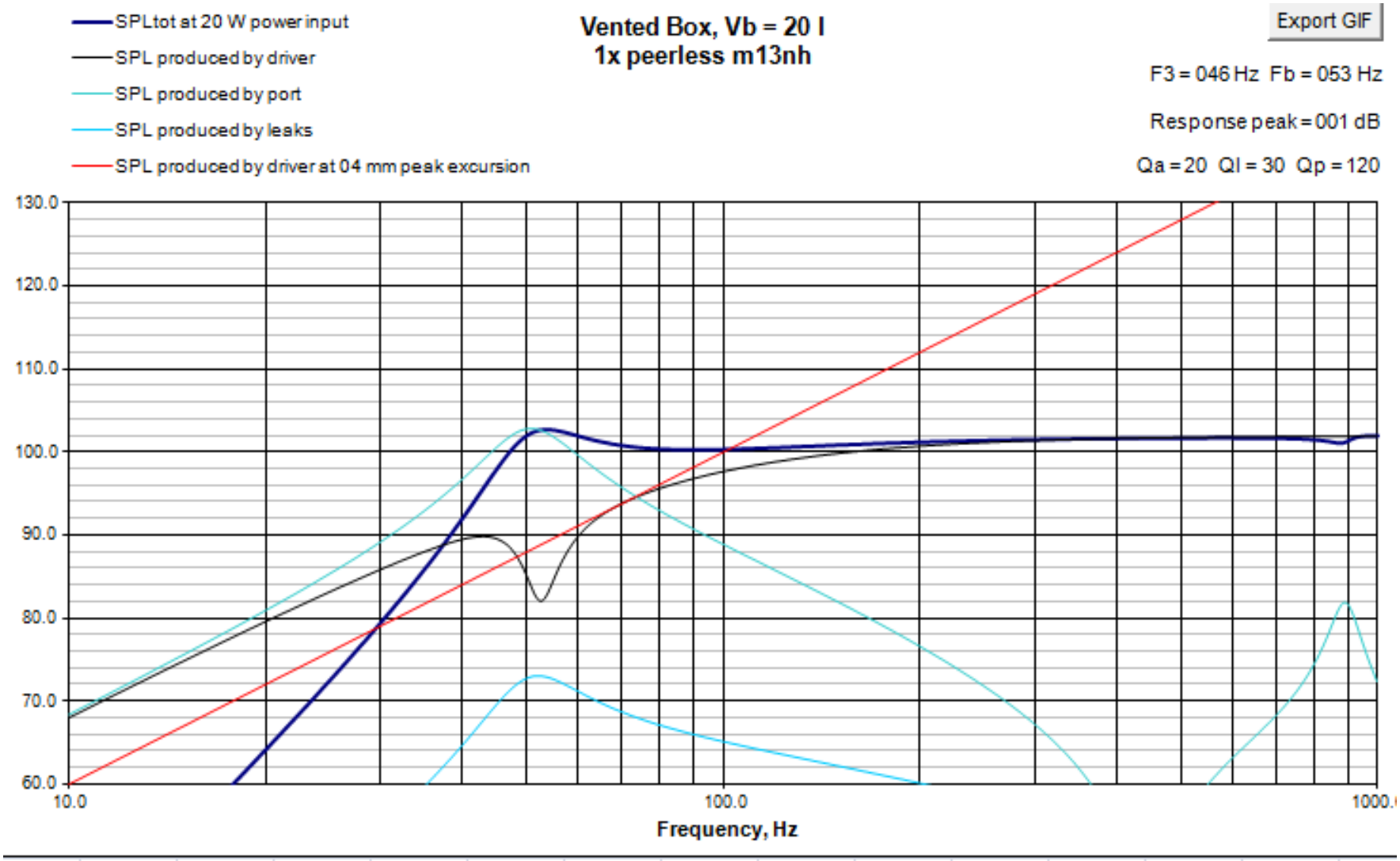
Damping	Walls covered	Recal
Leakage	Minimal leaks	Recal
Port type	One flared end	Recal

Graphs updated	Update
Frequency response	Update

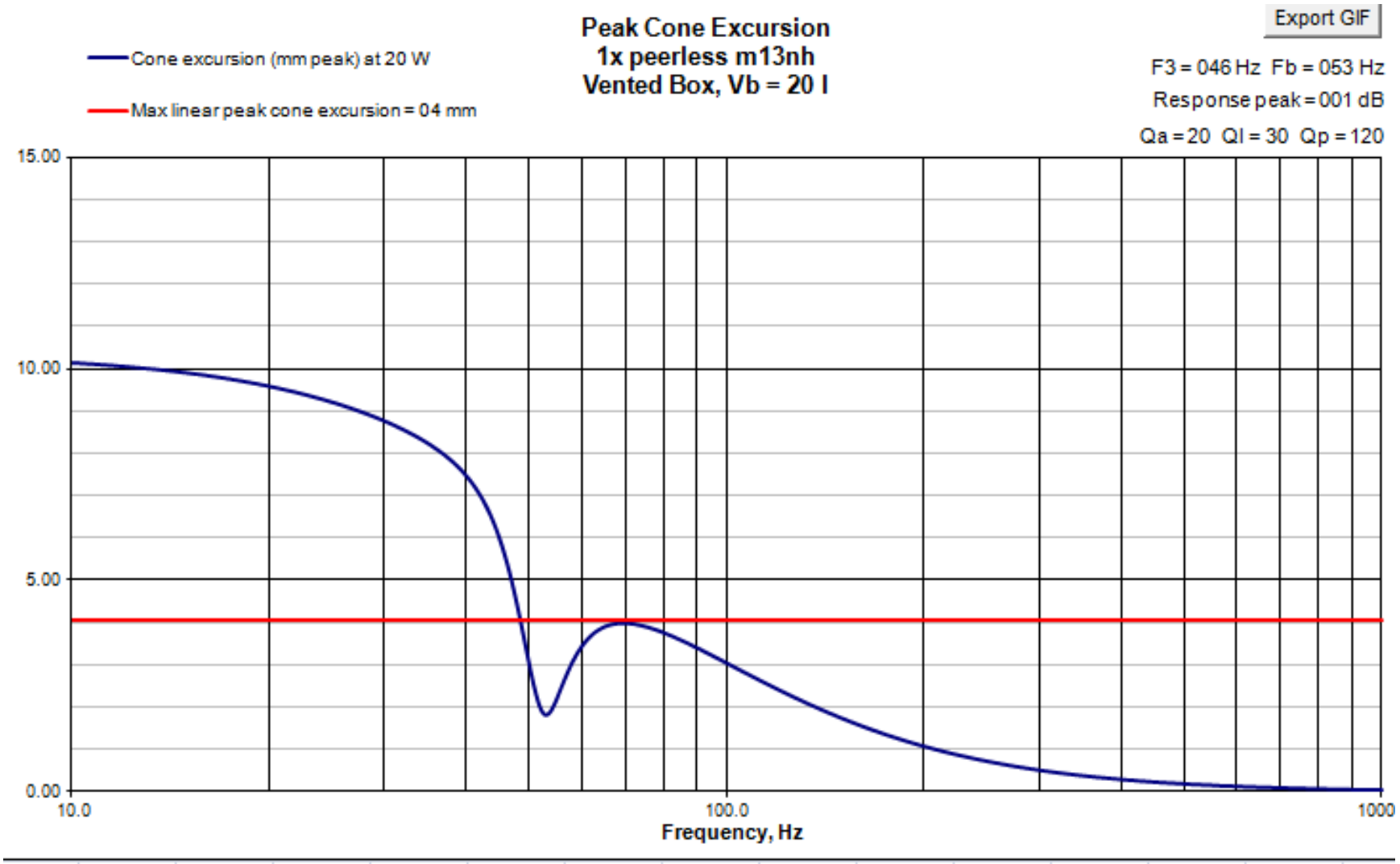
Wanted tuning peak	0.00 dB
Optimise Fb for wanted peal	Start

Export frequency response	FRD
Export speaker impedance	ZDA

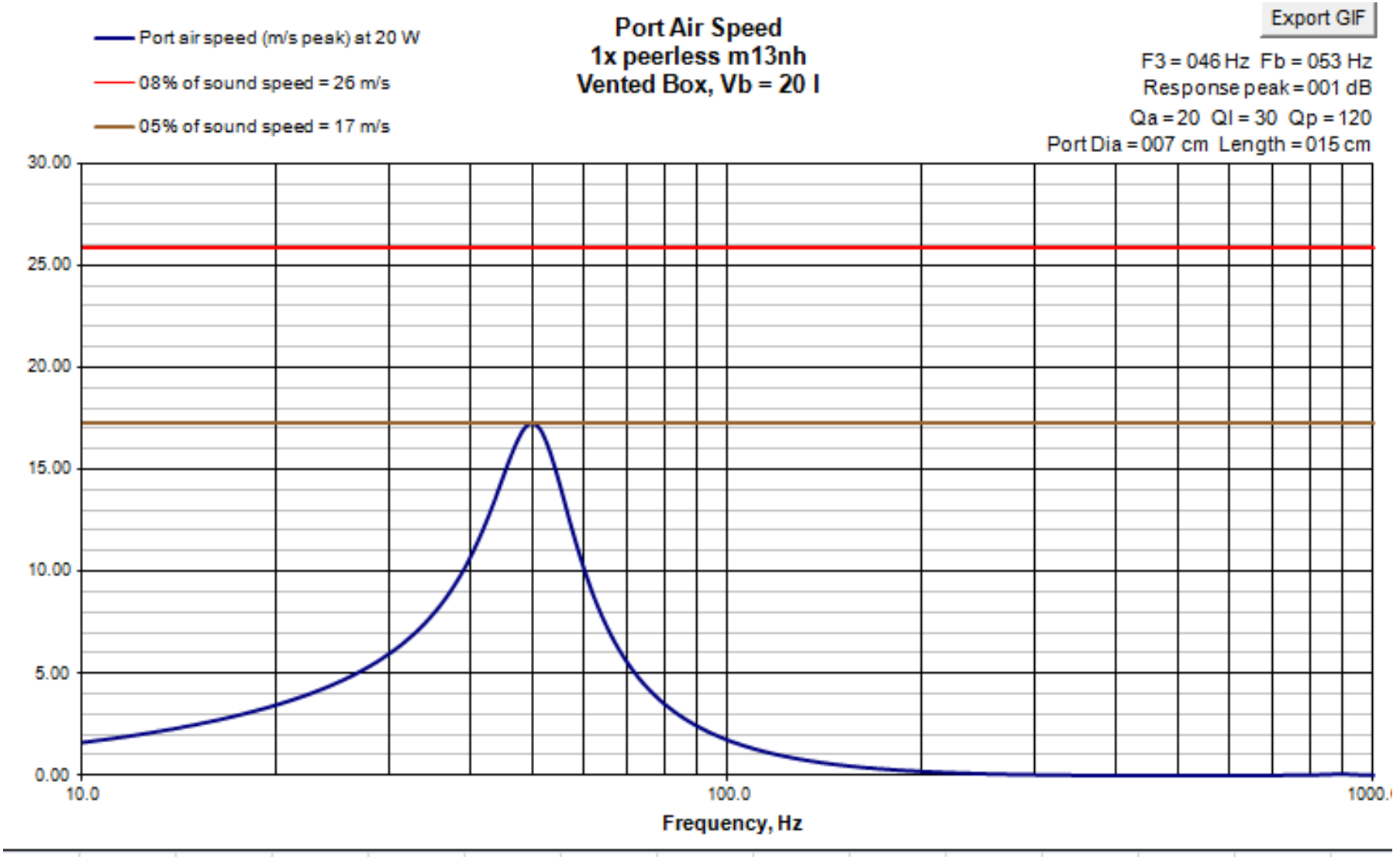
Unibox Simulations



Unibox Simulations



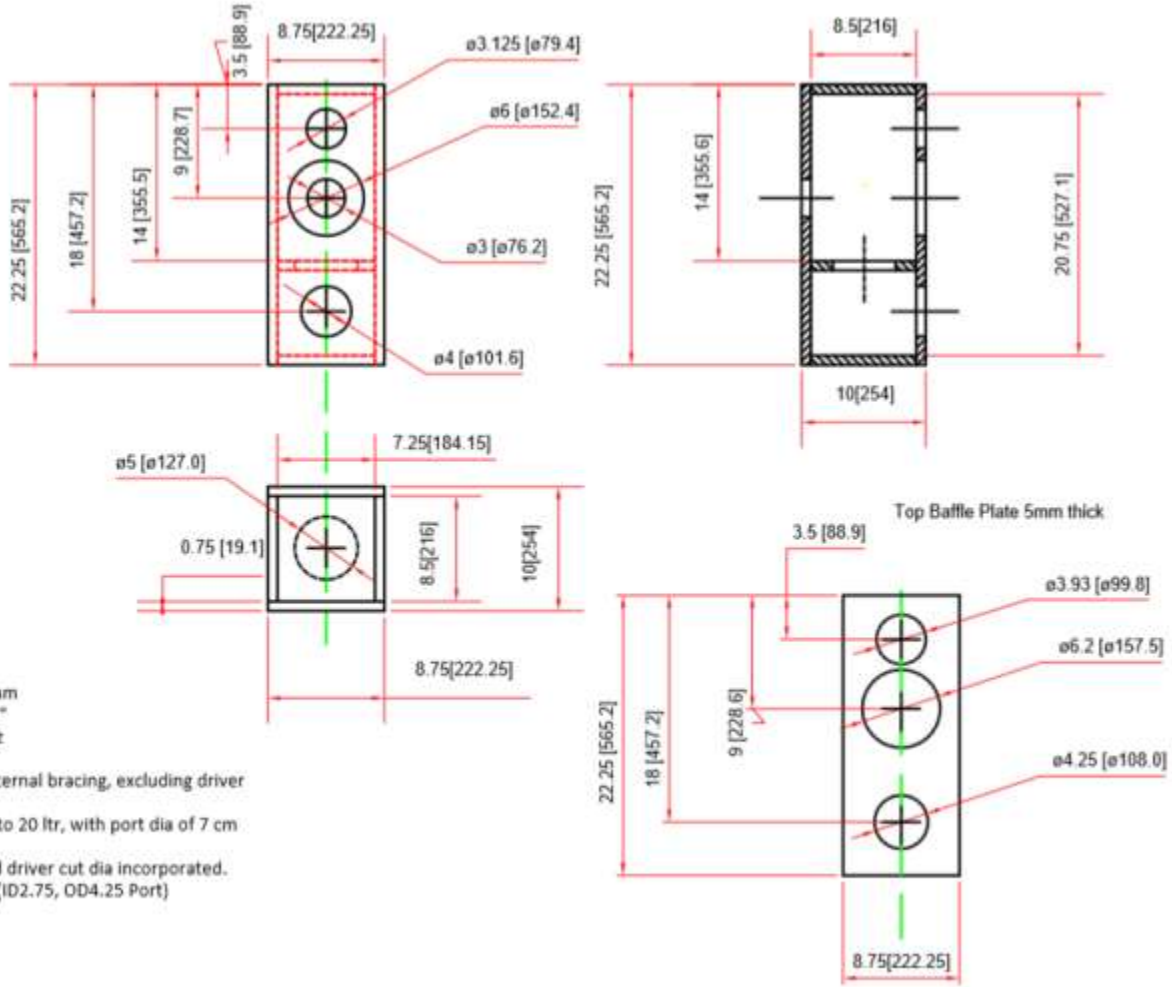
Unibox Simulations



Unibox simulation summary

- Box Tune Frequency: Fb:52.7Hz
- Box F3: 45.71
- Unibox Calculations are tuned to 20 ltr, with port dia of 7 cm and 152cm length
- Total Box Volume (including internal bracing, excluding driver volume)- 20.326ltr. (assumption that driver volume is 0.326 ltr)

Enclosure design



1. Tweeter: Peerless TL26SG, 26mm
2. Woofer: Peerless M13NH, 5.25"
3. Box Tune Frequency: Fb:52.7Hz
4. Box F3: 45.71
5. Total Box Volume (including internal bracing, excluding driver volume)- 20.326ltr.
6. Unibox Calculations are tuned to 20 ltr, with port dia of 7 cm and 152cm length
7. TL26 SG Baffle flush mount and driver cut dia incorporated.
8. Port Cut out dia incorporated (ID2.75, OD4.25 Port)

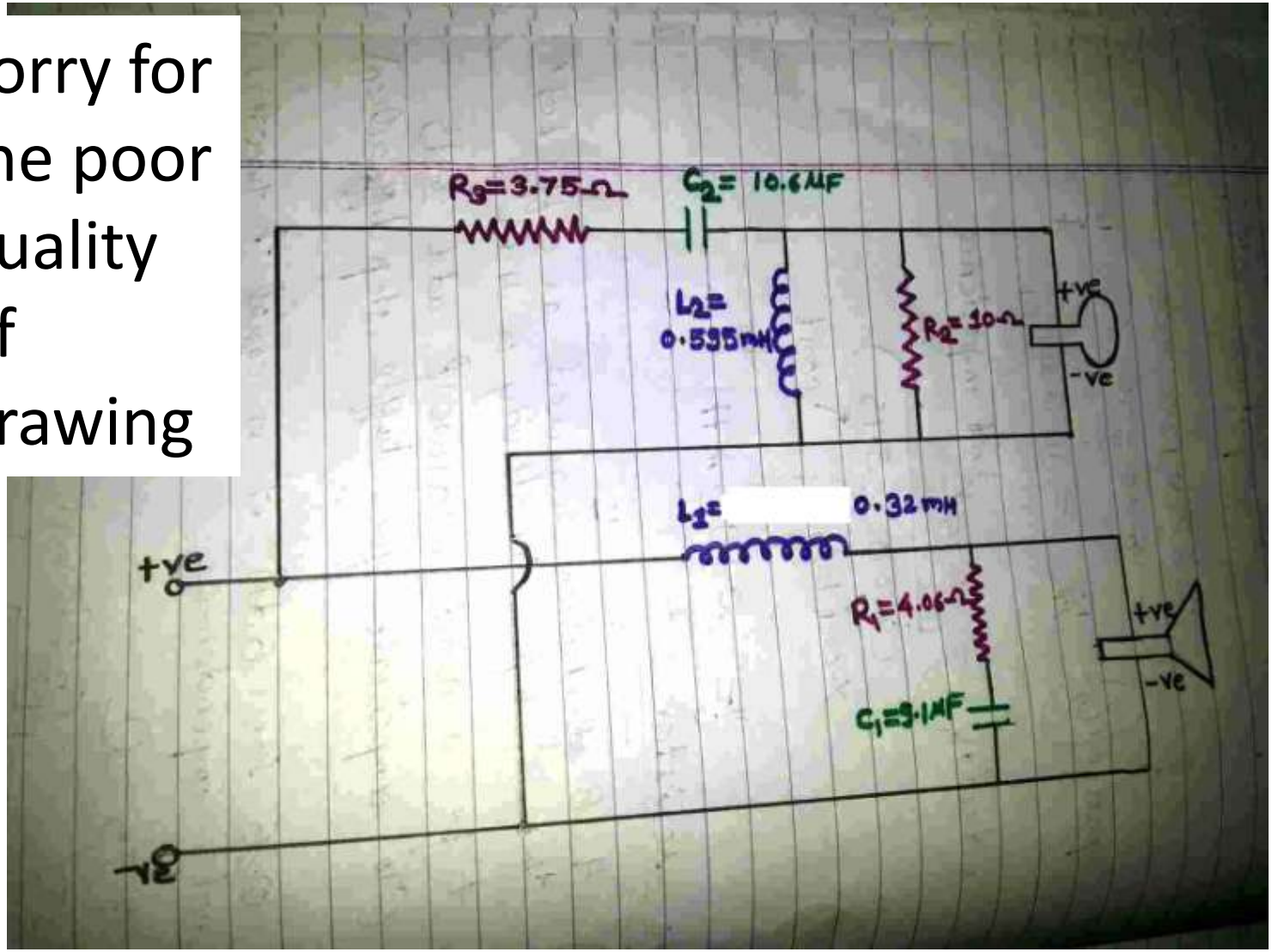
Main Units are in Inches, Units in brackets are in mm

Crossover circuit

- Woofer impedence: 4 Ohm
- Tweer impedence: 6 Ohm
- Crossover frequency: 2000Hz
- First order crossover considered
- L: pad attenuator is used to reduce the tweeter o/p and flatten impedence
- Zobel network is used to flatten the woofer's impedence

Crossover circuit

Sorry for the poor quality of drawing



queries

- Whatever I have done till now, does it make sense?
- Can anybody tell me whether
  - 20ltr volume is too much for M13NH?
  - Will it sound boomy?
- Whether the crossover network design is correct?
- Will the damn thing perform acceptably (not audiophile acceptability)
- This is my first project, so I want to just try out to see if it can work…..
- Thanks a lot….