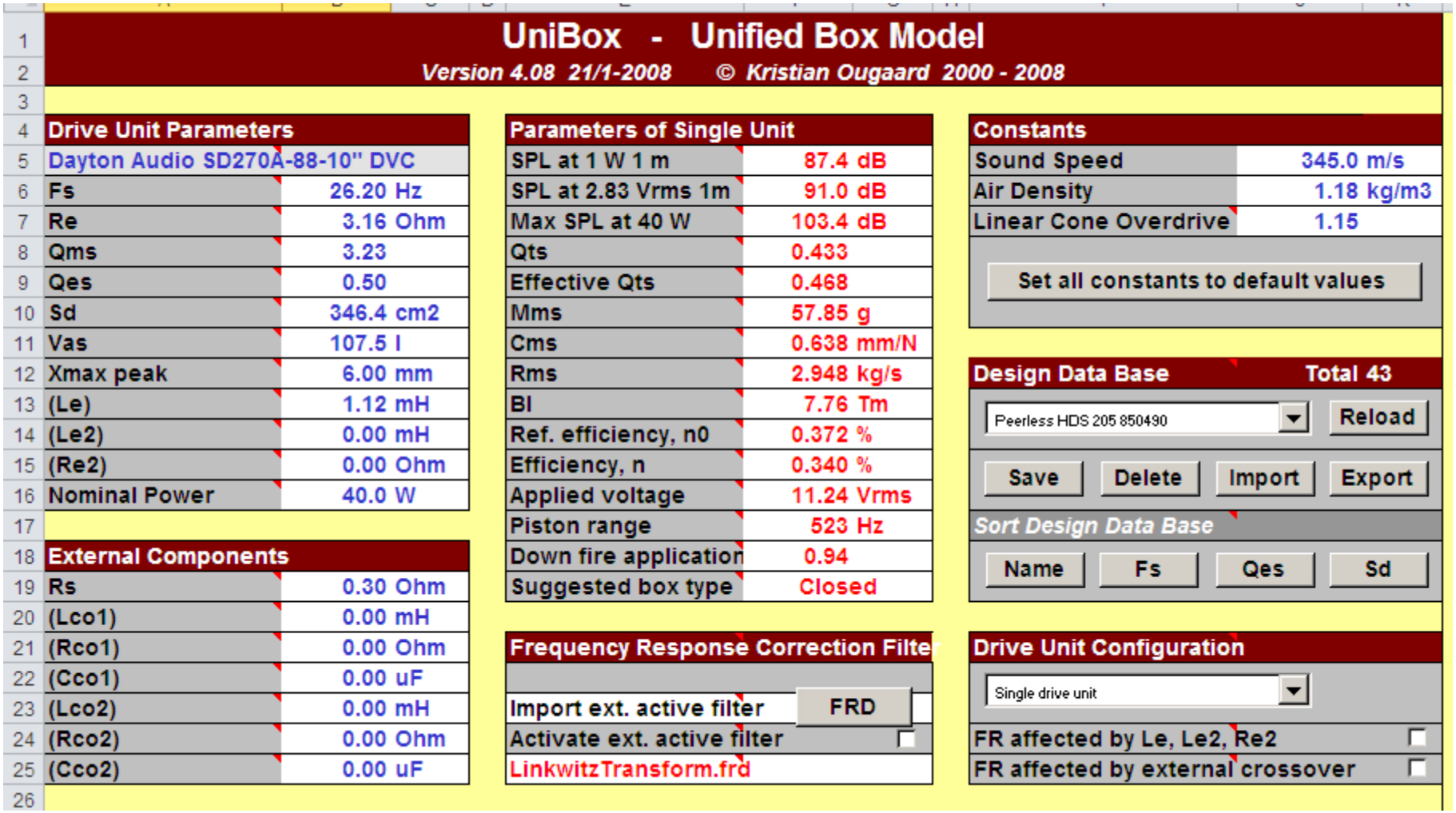
Vented box design for Dayton Audio SD270-88 –TS Parameters and Power input



UniBox - Unified Box Model

Version 4.08 21/1-2008 © Kristian Ougaard 2000 - 2008

Drive Unit Parameters

Dayton Audio SD270A-88-10" DVC	
Fs	26.20 Hz
Re	3.16 Ohm
Qms	3.23
Qes	0.50
Sd	346.4 cm2
Vas	107.5 l
Xmax peak	6.00 mm
(Le)	1.12 mH
(Le2)	0.00 mH
(Re2)	0.00 Ohm
Nominal Power	40.0 W

External Components

Rs	0.30 Ohm
(Lco1)	0.00 mH
(Rco1)	0.00 Ohm
(Cco1)	0.00 uF
(Lco2)	0.00 mH
(Rco2)	0.00 Ohm
(Cco2)	0.00 uF

Parameters of Single Unit

SPL at 1 W 1 m	87.4 dB
SPL at 2.83 Vrms 1m	91.0 dB
Max SPL at 40 W	103.4 dB
Qts	0.433
Effective Qts	0.468
Mms	57.85 g
Cms	0.638 mm/N
Rms	2.948 kg/s
Bl	7.76 Tm
Ref. efficiency, n0	0.372 %
Efficiency, n	0.340 %
Applied voltage	11.24 Vrms
Piston range	523 Hz
Down fire application	0.94
Suggested box type	Closed

Frequency Response Correction Filter

Import ext. active filter	FRD
Activate ext. active filter	☐
LinkwitzTransform.frd	

Constants

Sound Speed	345.0 m/s
Air Density	1.18 kg/m3
Linear Cone Overdrive	1.15

Set all constants to default values

Design Data Base — Total 43

Peerless HDS 205 850490 — Reload

Save | Delete | Import | Export

Sort Design Data Base

Name | Fs | Qes | Sd

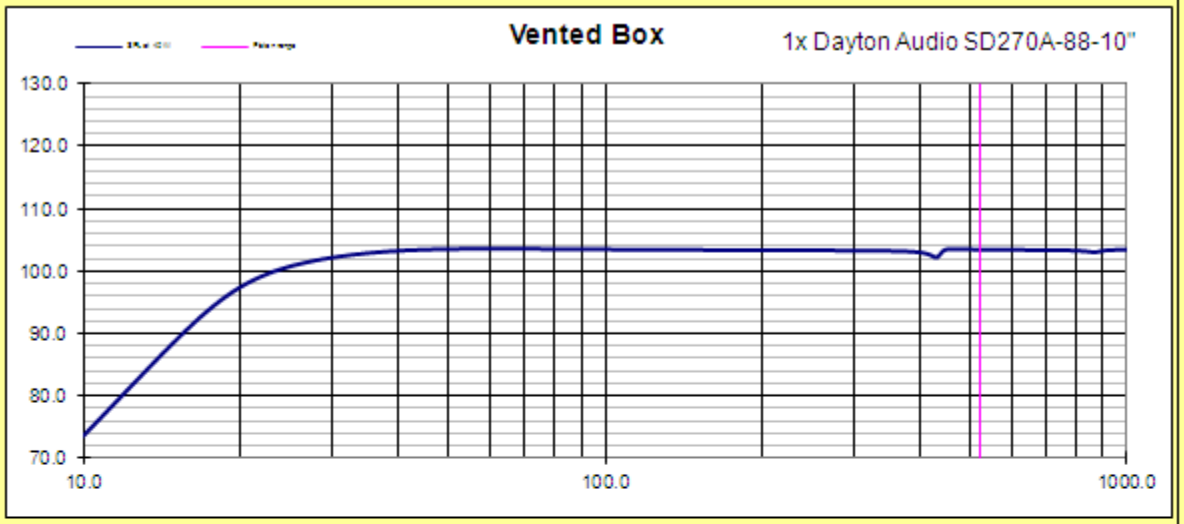
Drive Unit Configuration

Single drive unit

FR affected by Le, Le2, Re2	☐
FR affected by external crossover	☐

Vented box design and port parameters

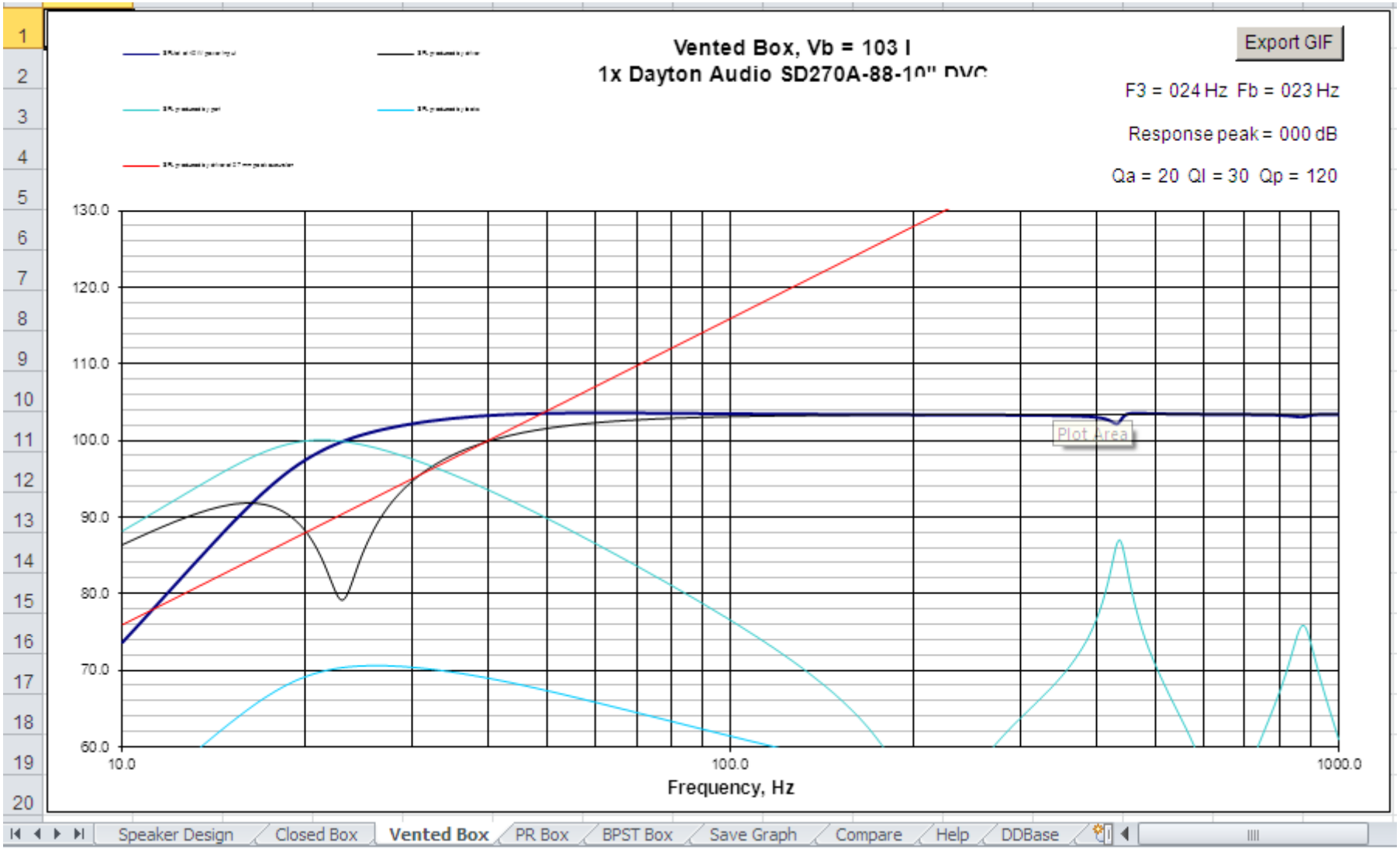
52		
53	**Vented Box**	
54	*Port*	
55	No of ports	2
56	Inside port dia.	6.99 cm
57	Port area	76.75 cm2
58	Port end correction	0.732
59	*Standard Design*	
60	Vb	175.6 l
61	Fb	22.50 Hz
62	F3	21.11 Hz
63	Port min dia.	6.54 cm
64	Port length	20.90 cm
65	*Design by Vb, Fb and Q*	
66	Physical Vb	102.7 l
67	Absorption, Qa	20
68	Leakage, Ql	30
69	Port, Qp	120
70	Alpha, a	0.987
71	Vb	108.9 l
72	Fb	23.00 Hz
73	F3	24.21 Hz
74	Response peak	0.16 dB
75	Peak at	60.81 Hz
76	Port min dia.	5.46 cm
77	Port length	35.04 cm
78	Port 1. resonance	434 Hz
79	Include effect of port resonance	☑



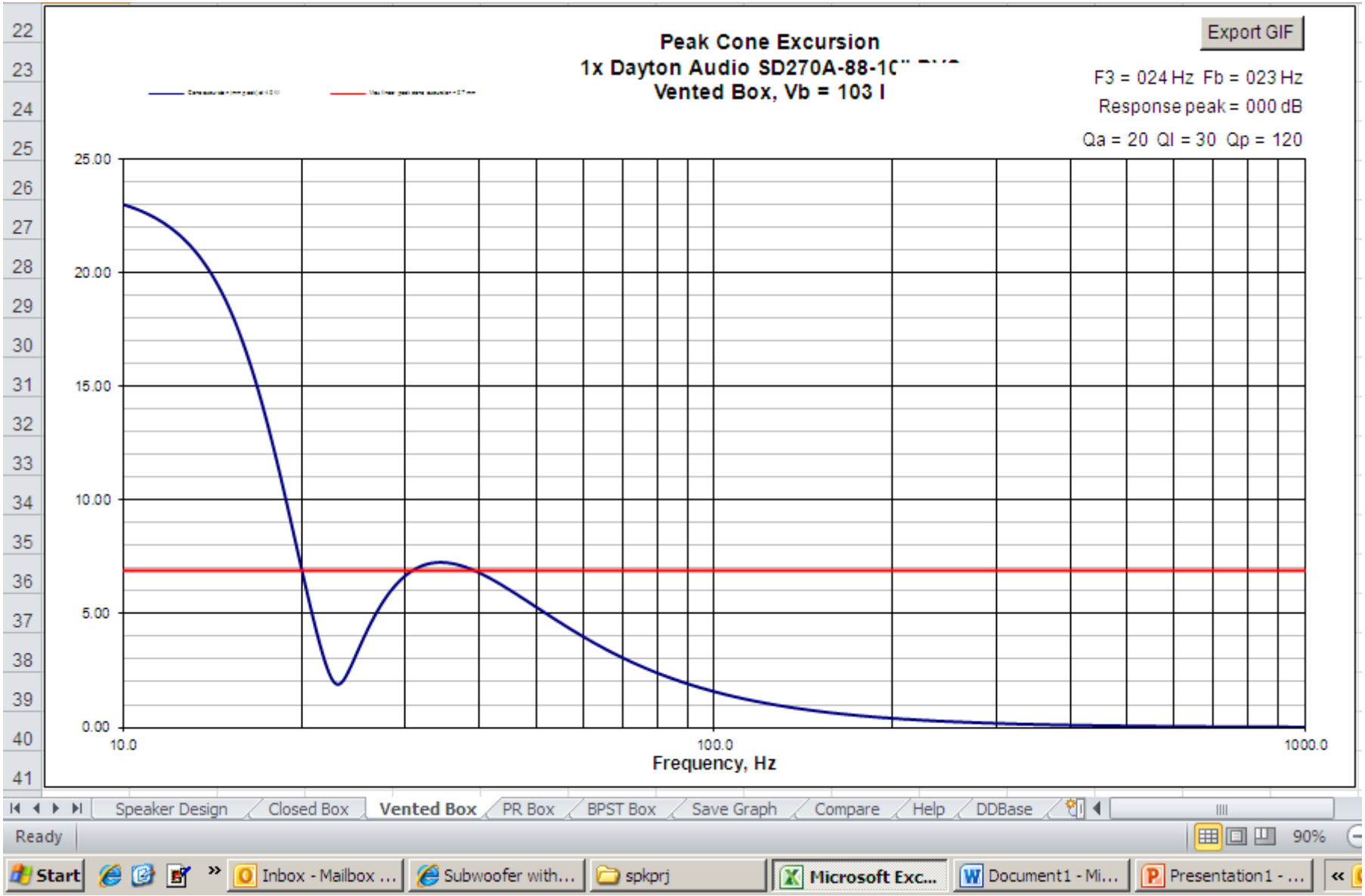
Damping	Walls covered	Recal	Graphs updated	Update
Leakage	No leaks	Recal	Frequency response	Update
Port type	One flared end	Recal		
Wanted tuning peak	0.00 dB		Export frequency response	FRD
Optimise Fb for wanted peak		Start	Export speaker impedance	ZDA

Speaker Design | Closed Box | Vented Box | PR Box | BPST Box | Save Graph | Compare | Help | DDBase

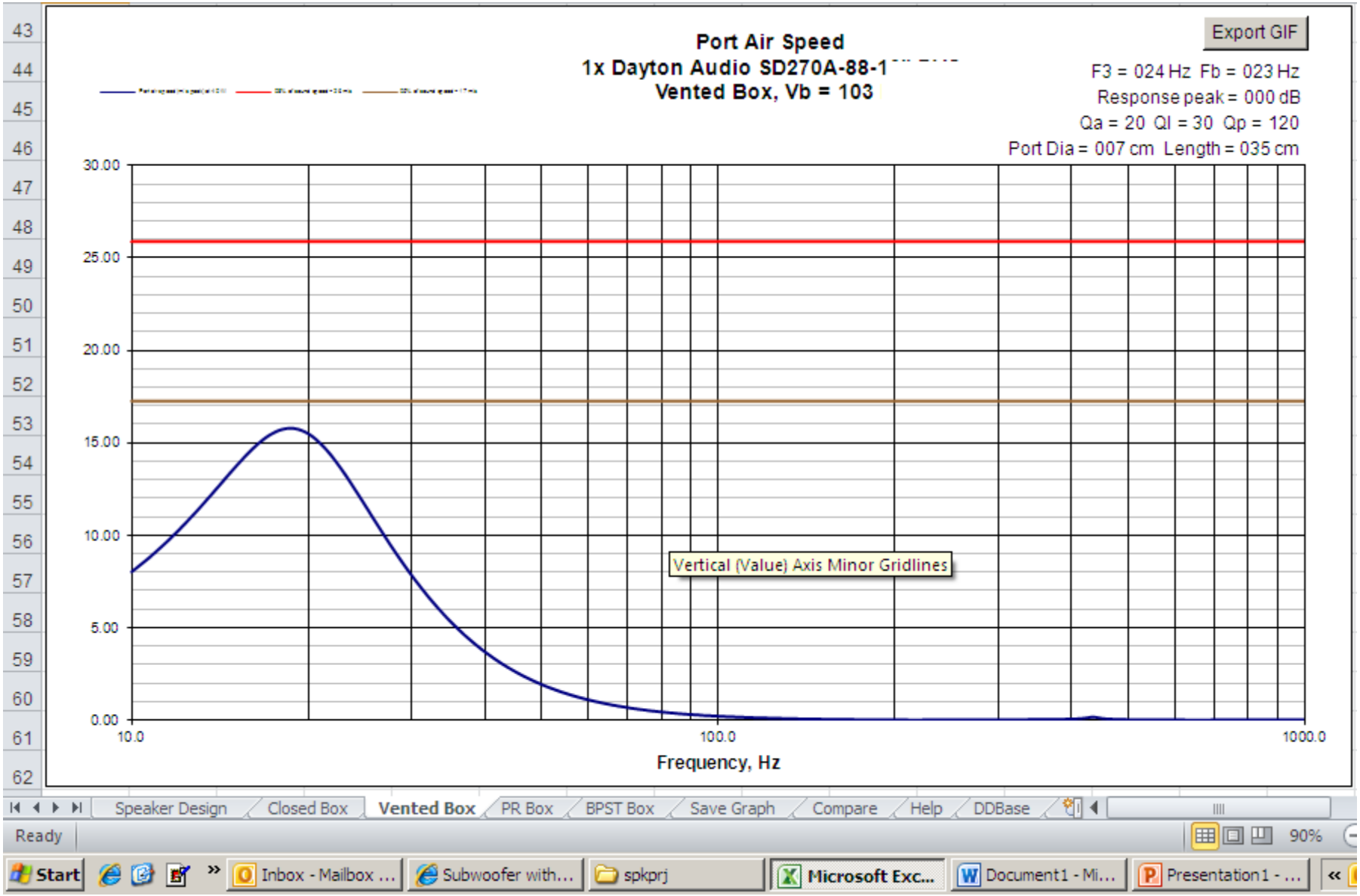
Simulated F-R



Peak Cone excursion (allowable linear cone overdrive taken to be 1.15 x driver x-max



Port Air Speed



Step Response