

UniBox - Unified Box Model

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

Drive Unit Parameters

Dayton Audio SD270A-88-10" DVC	
Fs	26.00 Hz
Re	3.16 Ohm
Qms	3.23
Qes	0.50
Sd	346.4 cm ²
Vas	107.6 l
Xmax peak	6.00 mm
(Le)	1.12 mH
(Le2)	0.00 mH
(Re2)	0.00 Ohm
Nominal Power	20.0 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	87.3 dB
SPL at 2.83 Vrms 1m	90.9 dB
Max SPL at 20 W	100.3 dB
Qts	0.433
Effective Qts	0.468
Mms	58.69 g
Cms	0.638 mm/N
Rms	2.968 kg/s
BI	7.78 Tm
Ref. efficiency, n0	0.364 %
Efficiency, n	0.322 %
Applied voltage	
Piston range	
Down fire application	
Suggested box type	Closed

Applied voltage is the RMS voltage your amplifier needs to produce in order to deliver the Nominal Power.

Frequency Response Correction Filter

Import ext. active filter	FRD
Activate ext. active filter	<input type="checkbox"/>
Linkwitz Transform.frd	

Constants

Sound Speed	345.0 m/s
Air Density	1.18 kg/m ³
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

Design Data Base

Name

Fs

Qes

Sd

Drive Unit Configuration

Single drive unit

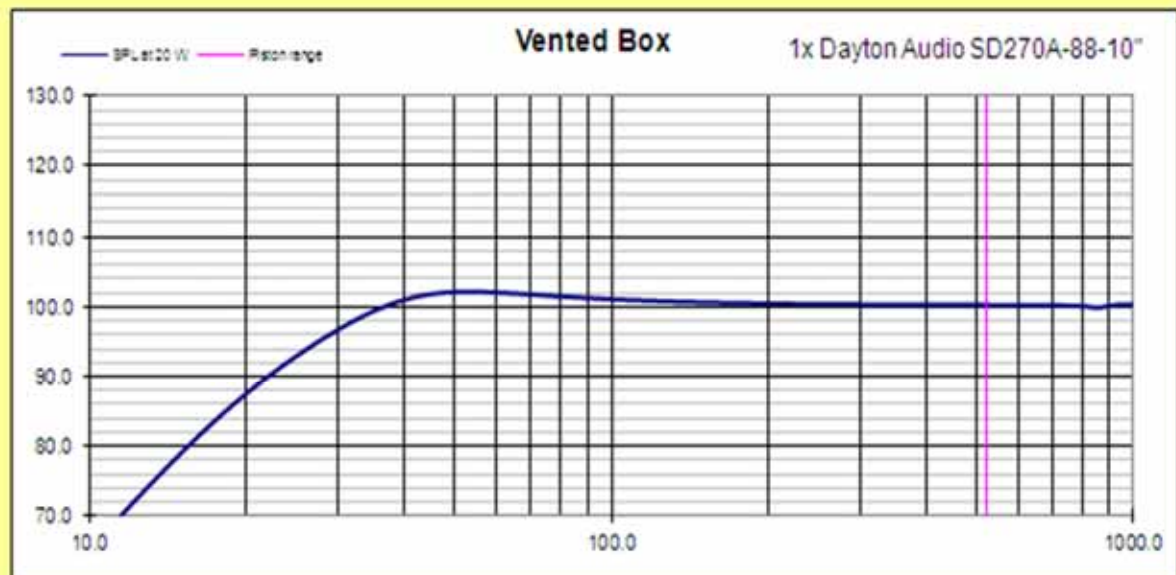
FR affected by Le, Le2, Re2

☐

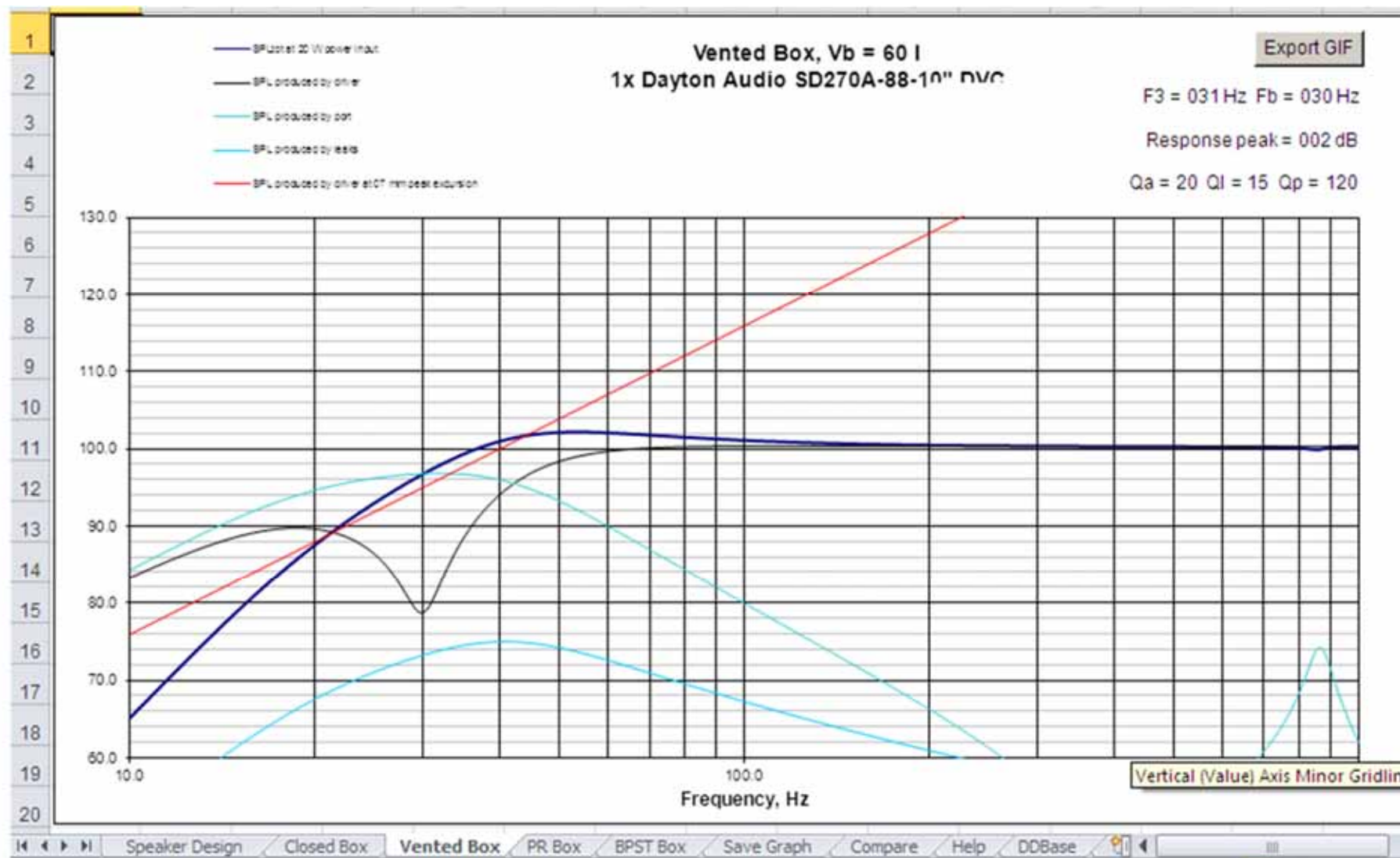
FR affected by external crossover

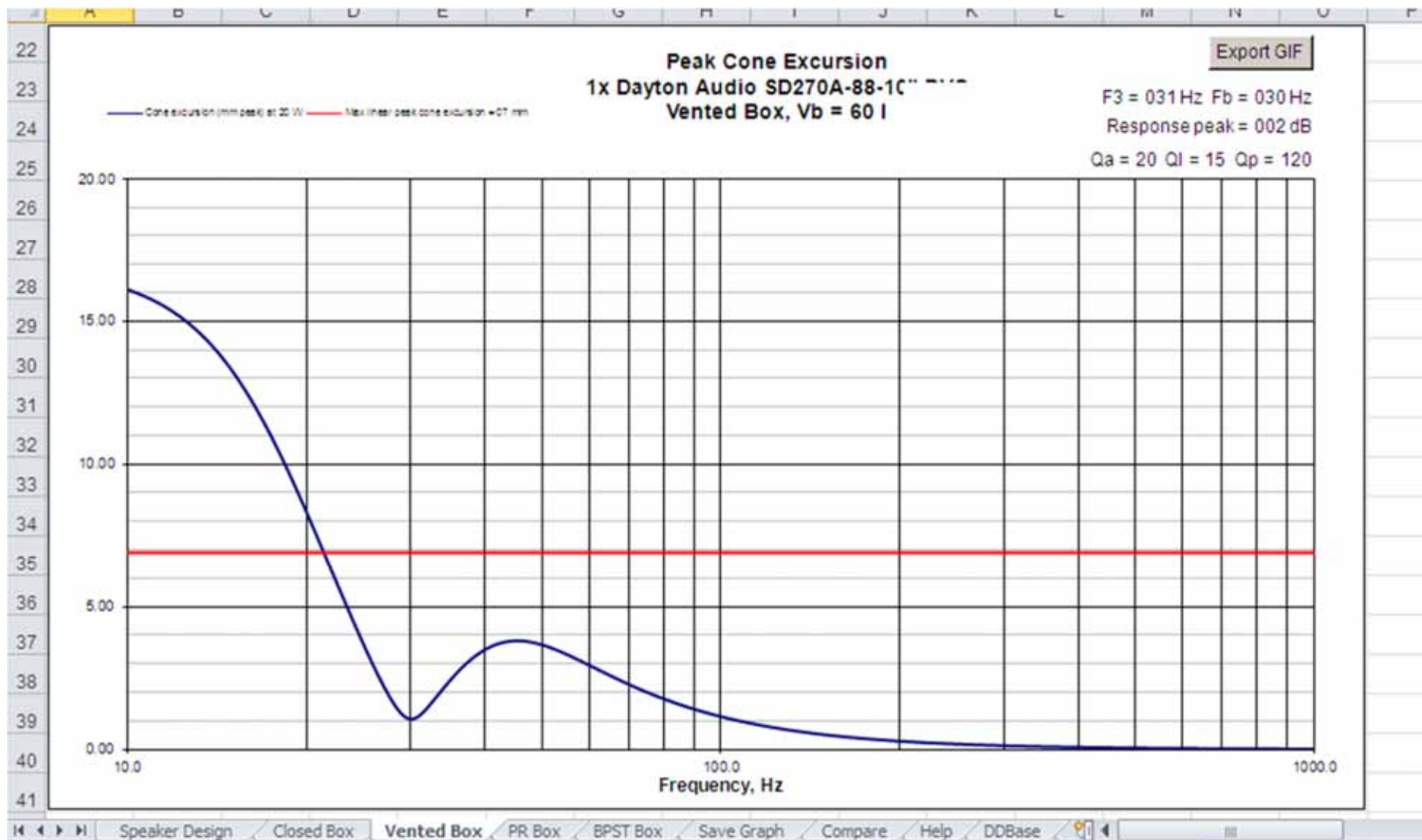
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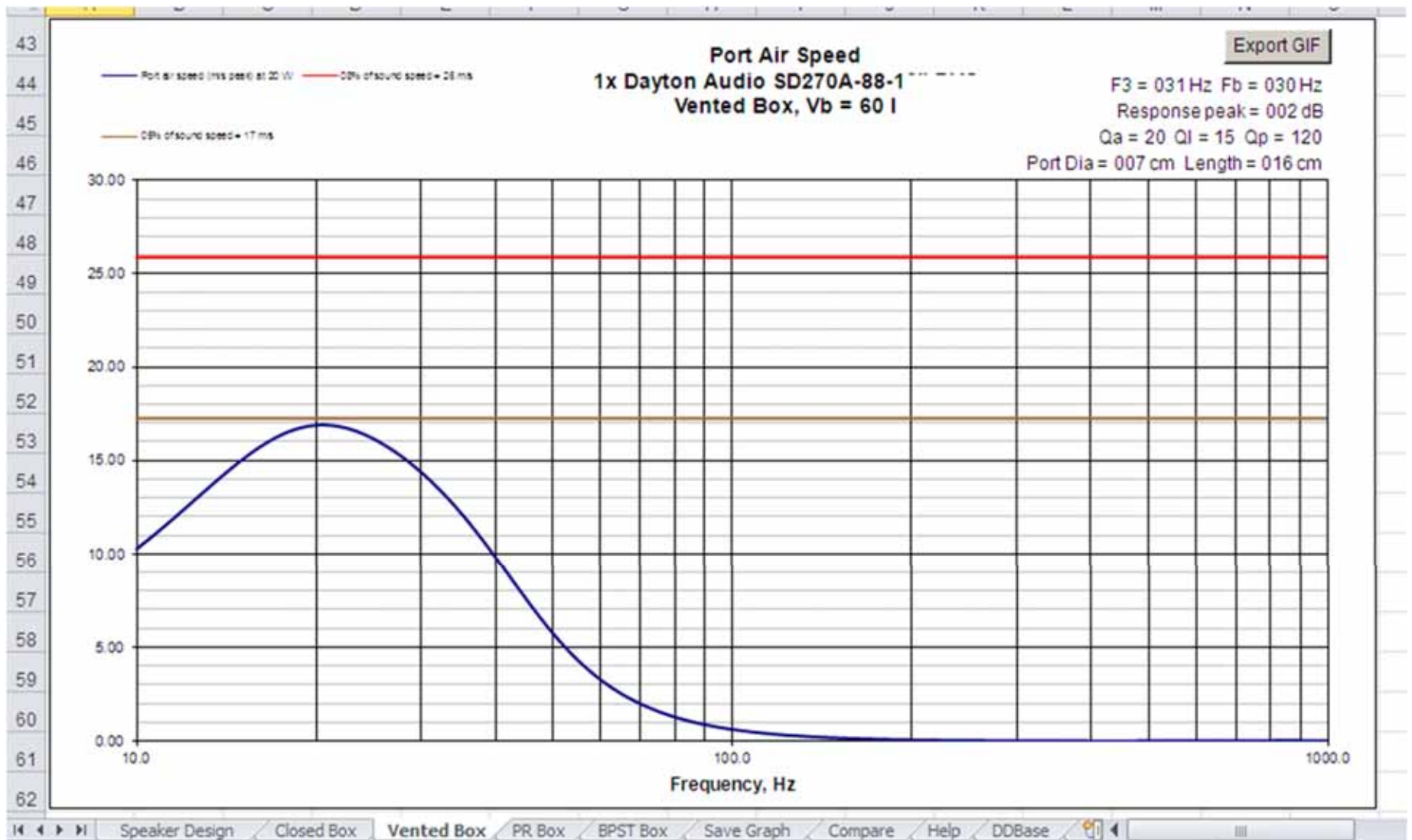
53	Vented Box	
54	Port	
55	No of ports	1
56	Inside port dia.	6.99 cm
57	Port area	38.32 cm ²
58	Port end correction	0.646
59	Standard Design	
60	Vb	175.8 l
61	Fb	22.33 Hz
62	F3	20.95 Hz
63	Port min dia. !	9.24 cm
64	Port length	8.67 cm
65	Design by Vb, Fb and Q	
66	Physical Vb	60.0 l
67	Absorption, Qa	20
68	Leakage, Ql	15
69	Port, Qp	120
70	Alpha, a	1.691
71	Vb	63.6 l
72	Fb	30.00 Hz
73	F3	31.05 Hz
74	Response peak	1.85 dB
75	Peak at	53.46 Hz
76	Port min dia.	5.64 cm
77	Port length	15.66 cm
78	Port 1. resonance	859 Hz
79	Include effect of port resonance	<input checked="" type="checkbox"/>



Damping Walls covered ▼ Recal	Graphs updated Update
Leakage Minimal leaks ▼ Recal	Frequency response Update
Port type One flared end ▼ Recal	
Wanted tuning peak 0.00 dB	
Optimise Fb for wanted peak Start	
Export frequency response FRD	
Export speaker impedance ZDA	







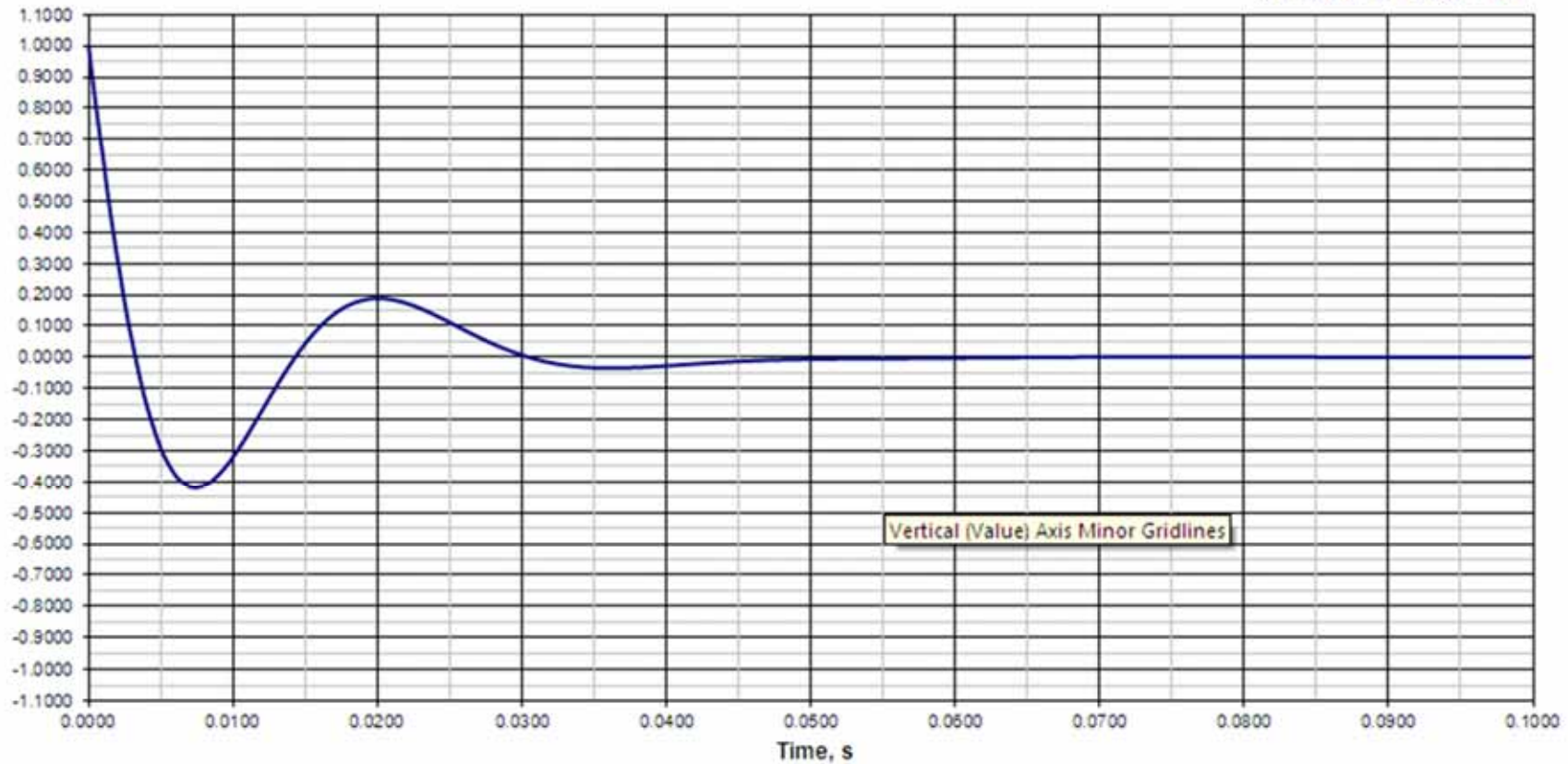
Calculate Step Response

Step Response
1x Dayton Audio SD270A-88-1
Vented Box, $V_b = 60 \text{ l}$

Export GIF

$F_3 = 031 \text{ Hz}$ $F_b = 030 \text{ Hz}$
Response peak = 002 dB
 $Q_a = 20$ $Q_l = 15$ $Q_p = 120$

— Normalised Step Response



Vertical (Value) Axis Minor Gridlines