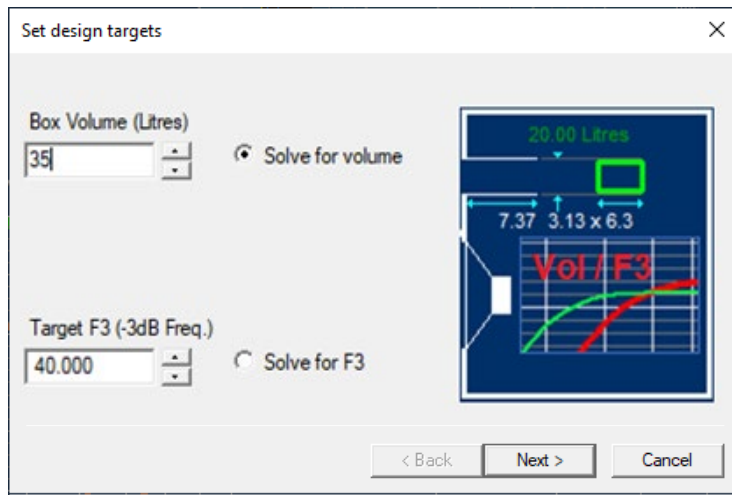


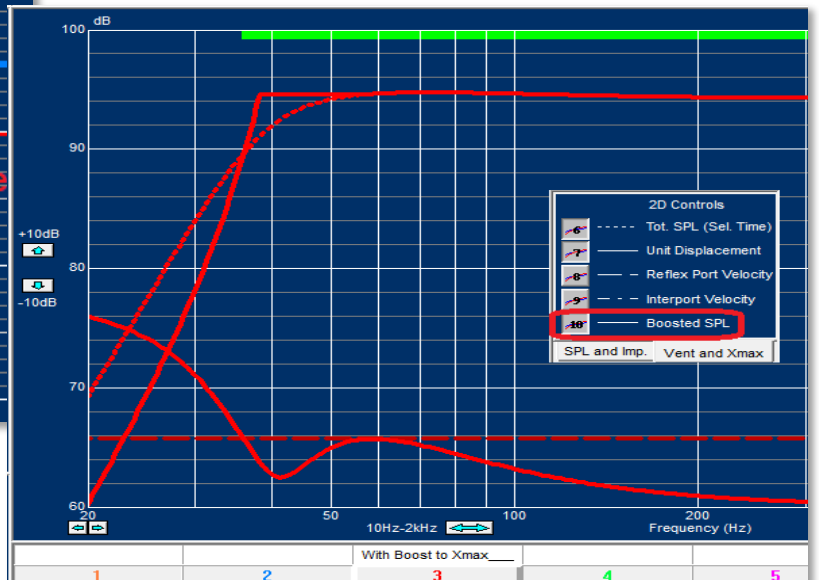
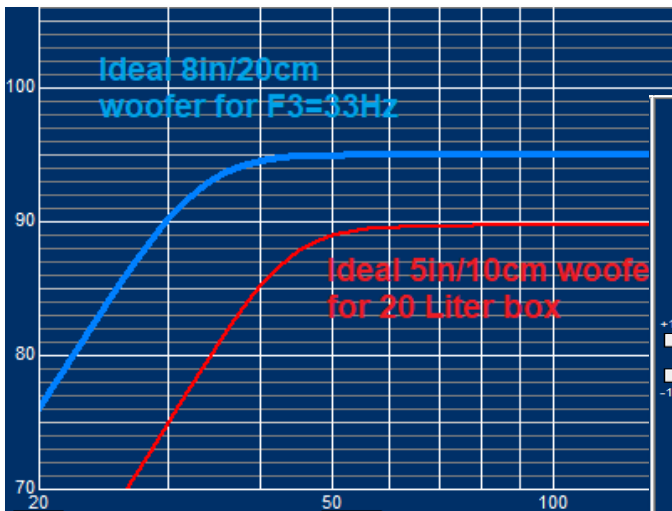
FINEBox™ + Inverse FINEBox 2023

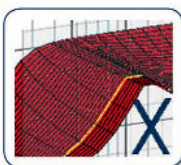
- DIRECT High Power/Temperature calcs from dims (without FINEMotor input)
- Export of responses WITH Voltage and power levels
- Bass Reflex response with MAX Boosting
- Notes in main view and on Print.
- Export of Woofer and Port partial responses
- New enhanced Summery PRINT
- 1st Port resonance calculated



Design the ideal driver TS for **X volume** (L) box

Design the ideal driver TS for **F3 (-3dB)** frequency

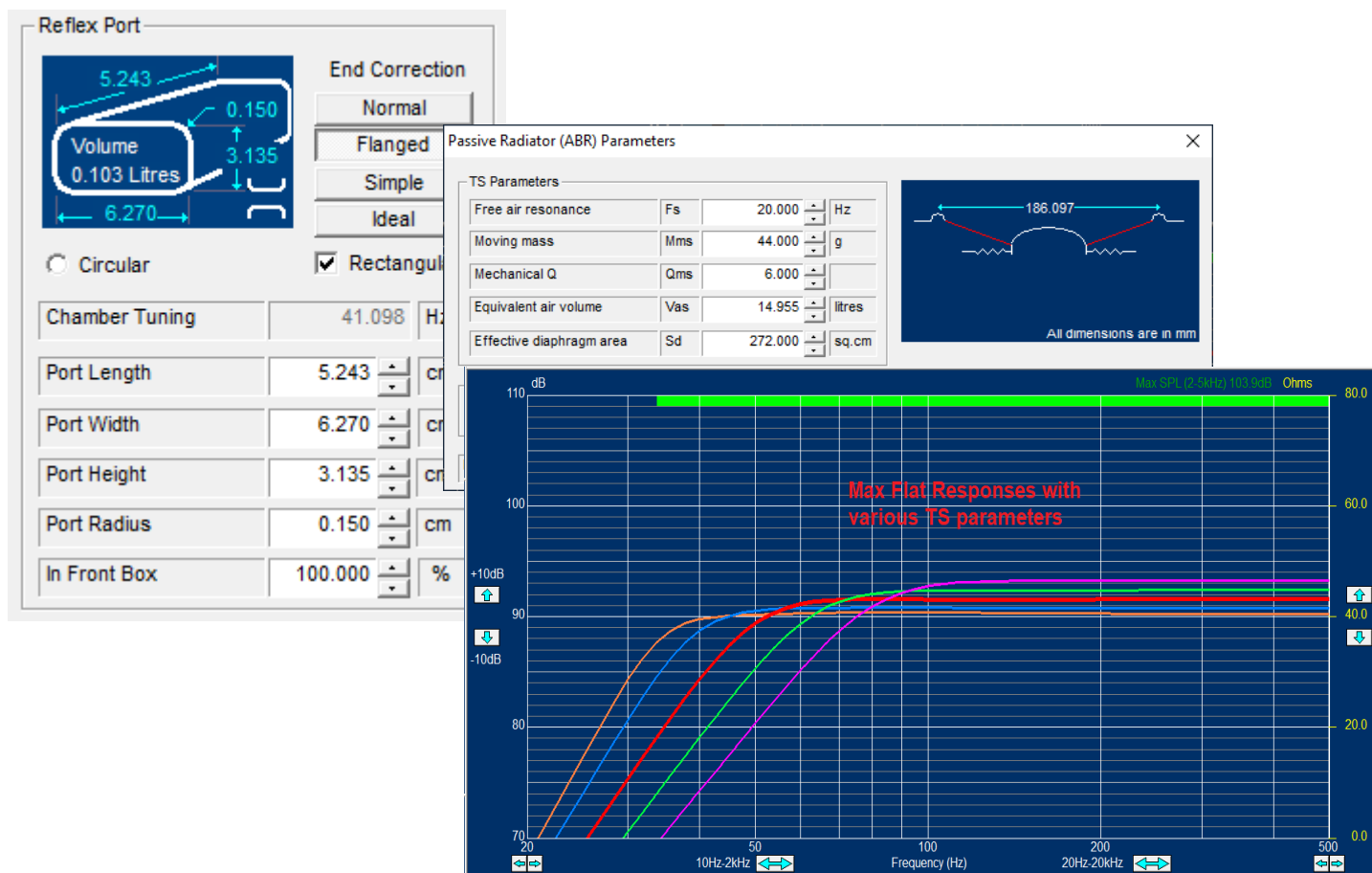




FINEBox™

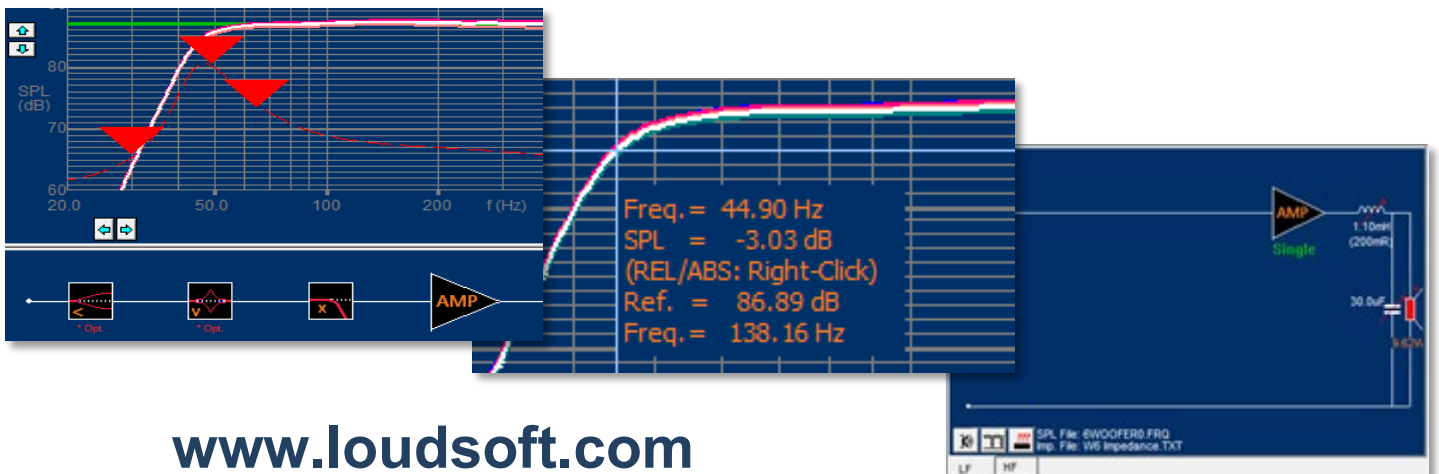
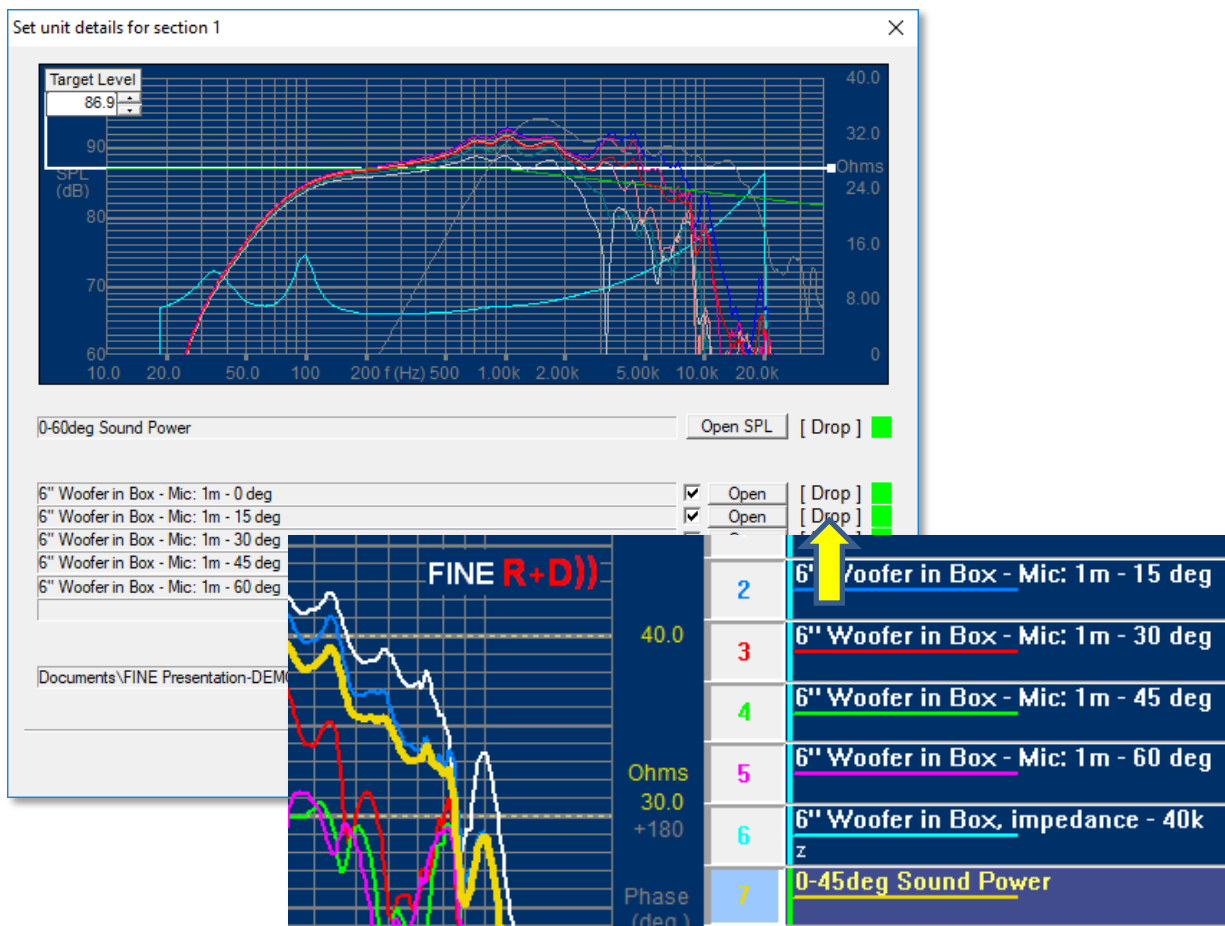
More Features

- Design the ideal box for an existing driver
- Design the ideal driver TS parameters for a given Box
- Max Flat Bass Reflex Responses for various TS-parameters
- Save and load TS-parameters as TXT
- Round and Rectangular Ports with Mouse adjustable Width and Height
- Constant Area Circular and Rectangular/Oval Ports
- New ABR / Passive Radiator designer
- Improved line colors and visibility on High-resolution Monitors
- Improved Air Speed accuracy for multiple ports



New Features in FINE DSP 2019™

- Cursor with both absolute and difference (dB) calculations
- Upgraded Unit Drive Voltage curves with max SPL points
- Now works with Sound Power responses from FINE R+D
- Drag & Drop responses with phase directly from FINE R+D
- Upgraded Hybrid/Single Amp cross-overs with optimized passive components +DSP



Shorting Rings in FINEMotor PRO 2021™

New Features

- Calculation of VC inductance over excursion plus accurate BL(x) in difficult cases.
- The basic Magnet system dimensions are made in FINEMotorPRO. Then various shorting rings and cap can be adaptively specified from the interactive menu below.
- The Scale View shows the actual components before FEM Analysis

FEMM Export

Shorting Rings and Caps

Active

- Top Ring Aluminium
- Magnet ID Ring Copper
- Pole Cap Electrolytic Copper
- Pole Ring Copper

Pole Extension: 3.45

Bump height: 6.00, Bump angle: 85

Dimensions (mm): 31.20, 25.84, 10.00, 36.00, 33.94, 17.00, 31.80, 5.00, 25.00, 31.20, 31.20, 26.46, 23.00

Scale View

Steel Type: 1010 Steel

DC Model AC Model

Export Lua script to calculate Le(x)

Detailed Le(x)

Buttons: Cancel, OK, Reload Last

Keep steel dimensions from FINEMotor Allow dimensions to update steel dimensions

Dimension check: No issues found

More Features in FINE Motor PRO™ & Less expensive FINEMotor Standard

- Twin / Bifilar +Multi-layer Voice Coils (PRO)
- Twin/ Bifilar Voice Coils: Former in Inside / Center / Outside (PRO)
- Edge Wound / **Flat Wire** Voice Coils: 90deg or parallel to VC (PRO)
- Variable Backplate thickness with BL and sensitivity calcs. (PRO)
- BLx curves with 82%, 70% and 50% Xmax limits (Standard)

The “Industry Standard” FINEMotor now comes in 2 versions, both containing 36000 FEA calculations: A Standard and a Pro version. The Pro version has all the features, advanced calculations including oval and square magnetic systems that are most commonly used in the design of micro speakers.

With the Standard version, you still have the opportunity to design all round motors including BLx curves, pole geometry, Multi-layer round/edge wire VC’s and Neo motors.

Wire Type	Round wire		
Wire Material	Copper		
Former Material	Aluminium		
Note: Changing former material will adjust Qms			
Voice Coil Resistance DCR	Re	3.20	Ohms
Voice Coil Inside Diameter	VCID	25.40	mm

Number of Layers	n	2	↑ ↓
<input checked="" type="checkbox"/> Bifilar (Twin / Dual) Coil		2 2	
<input checked="" type="checkbox"/> Voice Coil Former Position	Inside	Middle <input checked="" type="checkbox"/>	Outside <input type="checkbox"/>
Voice Coil Former Thickness		0.050	mm
Wire Stretch		0.00	%

Pole ID		10	mm
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Bottom Plate

Min Bottom Plate Thickness (Recommended)		5.2	mm
Min Bottom Plate OD		60.0	mm
Specify Base Plate Thickness	<input checked="" type="checkbox"/>	4	mm

Edit Main Magnet Dimensions

Flux adjustment will be a factor of 98.0%

SPL and BL adjustment will be -0.18dB

Rectangular

Motor Parts

Pole Adjustment Extension

2.10

FINE R+D X))™ 2021

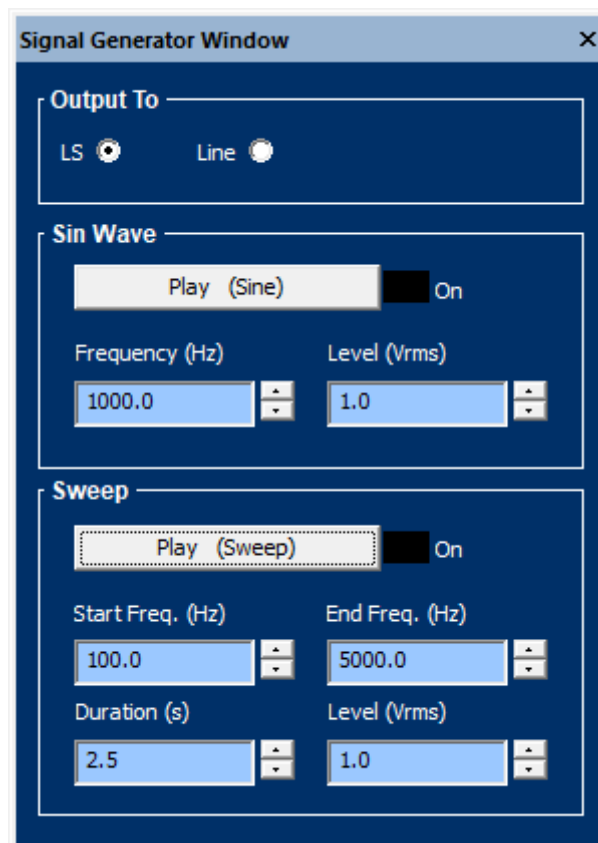
New Features

- New Signal Generator with Pure Sine wave output and user set sweeps.
- Signal Generator output both on Amplifier out and Line out.

The new Signal Generator module will output (play) a pure, very low distortion sine wave, at the speaker output (LS) or on the Line Out. The Line signal is balanced using pins 2 and 3. The default Line level is 100mV, instead of 1V, which could produce >100W using a large power amplifier.

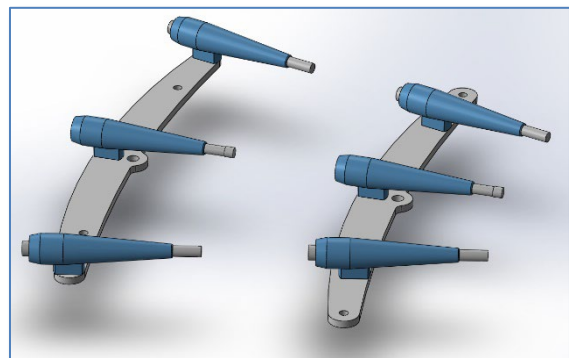
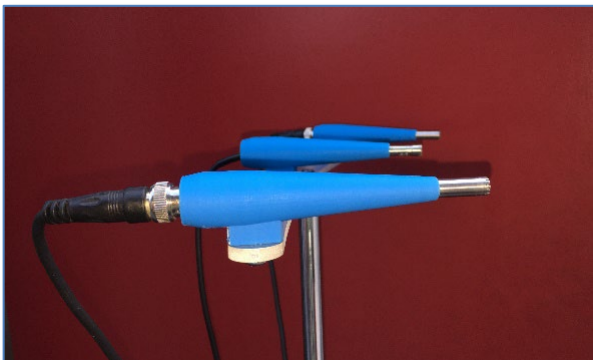
You can select both frequency (Hz) and level (Vrms). Or you can select a continuous (repeating) sweep. Select start and stop frequency, as well as duration (s) and level (Vrms). Max duration is 2.7s. This sweep is perfect for listening to your speaker.

By selecting a limited range (say 100-500Hz at 2.7s) you get a very detailed sweep, which is ideal for finding small problems.



More Features

- Compensation for room resonances as by National Research Council (NRC), Canada
- Export of Normalized curves in LAB and TXT formats
- New Multi-Microphone measurements with 3 microphones
- Special “Boomerang” 3 microphone array with fixed angles and distances



The Multimicrophone Array module for FINE R+D 2020 greatly helps making multiple microphone measurements. You can measure SPL from **3 microphones** simultaneously with **one click**.

This technique is extremely useful for off-axis measurements and multiple measurements of loudspeakers as well as large Professional Arrays.

All curves are easily dragged into the Polar / Contour display for viewing the dispersion or **Sound Power**.

In addition, LOUDSOFT offers the shown 3-microphone array, which combines 3 GRAS microphones into a pre-arranged pattern for different distances and angles. These microphones can be individually configured as for example one 100kHz microphone 46BE +2 less expensive 30kHz 1/4in microphones.

