



Virtual Voice Coil 2.x

KEY FEATURES

- ✓ Loudspeaker design for Woofers, Midranges, Tweeters, Compression Drivers, Headphones, Micro Speakers...
- ✓ *Wire Loss* and *SPL* charts added to *Cable Loss* (v. 2.1) parameters permit to control and maximize transducer efficiency
- ✓ $B(x)$ & $Bl(x)$ *Asymmetry* graphs permit to optimize motor design and select the best balance for reducing related non-linear distortions
- ✓ Suspensions *compliance* separation permits to find single component and system resonance. *Surround* and *spider* rates measure their contribution on total system, with multiples spiders (v. 2.1)
- ✓ $\pm XBl$ displacement limits @ Bl_{min} = 82%, assessing percentage variation along the $Bl(x)$ curve. *Maximum Available mechanical excursion (MAX)* given @ x Offset
- ✓ Membrane force direction audit avoids errors on the loudspeaker phase response
- ✓ Complete map of involved temperatures: **wire temperature** related to voice coil winding phase, **environment temperature** during the loudspeaker measurement and **Joule heating** (v. 2.1)
- ✓ Import flux density profile from *FEA* software (both period or comma decimal separator). The *swap* control reverses COIL IN \leftrightarrow COIL OUT direction. Processing negative fluxes
- ✓ Accurate calculus up to 20 layers, selecting *Diamond* or *Hexagonal* round wire winding configuration
- ✓ *Series*, *Bifilar*, *Parallel* plus all combinations of *Series-Parallel* multilayers connection with a design aid tool
- ✓ *Circular*, *Square* and *Rectangular* (specific for Micro Speakers) voice coil shape. *Single Coil* or *Dual Coil* (parallel & series) wiring (v. 2.1)
- ✓ *Round*, *Square* or *Rectangular* (Flat & Edge wound) wire sections (in mm and AWG) available, selecting *built-in* dimensions or using your own customizable wire sheet
- ✓ 7 different wire materials (*Copper*, *Aluminium*, *CCA*, *HCCAW*, *UCCAW*, *Silver*, *Gold*), 11 former materials and 22 *reinforcement tape* materials available
- ✓ Materials *resistivities*, *densities* and *geometry bounds* are automatically calculated and promptly updated
- ✓ Possibility to define *vent holes*, *copper pads* and *cuts* on voice coil former, or customize *exit wire leads*
- ✓ Instant plot of voice coil elements and transducer *Thiele & Small* parameters variation for all available wires
- ✓ *Dynamic Integral Screen User Interface* model: all elements are always displayed in a single panel under the end-user control, for an easy and fast interaction
- ✓ Mouse wheel over a digital control acts as a *virtual slider* permitting to gradually change voice coil or transducer parameters in real-time
- ✓ *HTML* report for sharing data, it could be useful to connect a CAD tool for importing data in supplier drawings

