



## FINE DSP™

### Digital X-Over and DSP simulation

“DSP X-Over Simulation incl. Hybrid (DSP + passive components)”

#### Features:

- Intuitive “drag and drop”-interface
- Up to 7 on/off-axis responses can be optimized in real time with acoustical phase
- Parametric EQ, Bandpass and Shelving filters with mouse adjustable Q and gain
- High order crossovers with mouse wheel up/down X-over frequency in real time
- Actual Power / Excursion limits SOA (Safe Operating Area) for loudspeaker drivers.
- Driver Digital Delay as Time / Distance or Digital samples
- Digital x-over and EQ can be simulated together with passive components
- Hybrid: One amplifier with DSP + passive X-over components for sections
- Real power sent to each driver is calculated and power/excursion limits are displayed
- No. of Digital Biquad's and Biquad Coefficients  $b_0$ ,  $b_1$ ,  $b_2$ ,  $a_1$ ,  $a_2$  export to amps.
- All values can be changed using mouse wheel for real time fine tuning

The screenshot displays the Loudsoft software interface. The main window shows a frequency response plot with multiple curves representing different drivers. A green shaded area at the bottom is labeled 'SOA Safe Operating Area for driver unit(s)'. The plot includes a 'DSP' logo and 'SPL' labels. To the right, a 'Drag DSP elements as required' panel shows icons for various filter types: a peak/dip, a shelf, a bandpass, a delay, a crossover, and a filter. Below this is a 'Tweak Peak/Dip Element' window with controls for 'Peak/Dip(dB)' (set to -5.500), 'F(Hz)' (set to 952.4), and 'Q' (set to 1.000). At the bottom, two 'Tweak X-Over Element' windows are shown, both with 'Shape' set to 'X-Over BU4' and 'F(Hz)' set to 2857. A green double-headed arrow indicates simultaneous dragging of the X-over frequency. To the right of these windows is a circuit diagram showing an 'AMP' block connected to a speaker model with components like a 10,000 F capacitor, a 360 H inductor, and a 2.15 Ohm resistor.

Simultaneous dragging of LP/HP X-over frequency