

The Basta Loudspeaker Simulator is a computer simulation tool for loudspeakers. It models open baffles, closed boxes, bass-reflex boxes and bandpass boxes. Ports can be either vents or passive radiators.

Basta! supplies a comprehensive set of response graphs, for example it can calculate 30 different graphs for the bass-reflex box, including frequency response, edge diffraction (baffle step), cone and vent velocities and excursion, maximum output level and overload margins.

Basta! supports the standard Thiele–Small parameters for drivers, with an enhanced model for the voice coil inductance. Drivers can be mounted in isobaric configuration, and the number of drivers can be more than 100. Multi-way systems are supported.

The baffle step is accurately modelled using the Geometric Theory of Diffraction (GTD). The baffle layout is designed in the easy-to-use baffle designer. The baffle step is included in the response graphs.

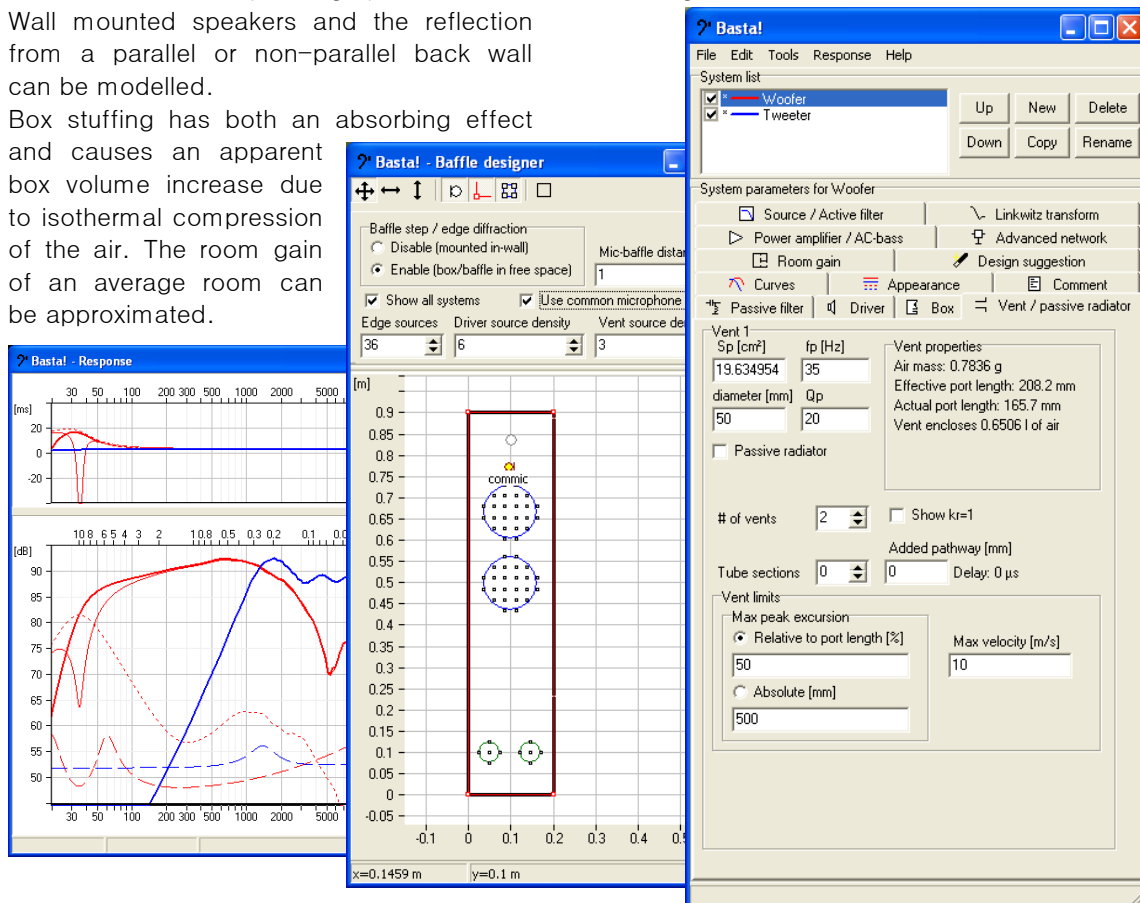
Wall mounted speakers and the reflection from a parallel or non-parallel back wall can be modelled.

Box stuffing has both an absorbing effect and causes an apparent box volume increase due to isothermal compression of the air. The room gain of an average room can be approximated.

A Linkwitz transform can be added to the response. Basta! also provides design suggestions in terms of three commonly used equations.

For filter design there are lookup tables for up to 4th order active and/or passive filters, conjugate link and L-pad with the possibility to tweak the individual component values. The interaction between the complex load impedance of the driver(s) and the passive components is taken into account. For more advanced filter designs Basta! can simulate virtually any passive filter configuration using the advanced network feature.

A frequency dependent maximum output level of the system is determined by a set of five limiting parameters, which includes driver X_{max} and maximum power dissipation. Basta! is a must-have for anyone who designs loudspeakers, professionals or DIY enthusiasts. Basta! is appreciated for its easy-to-use interface by many users throughout the world.



Box types

- Open baffle,
- Infinite baffle (large closed box)
- Closed box
- Bass-reflex box
- 4th order Bandpass box
- 6th order Bandpass box

Ports can be vents or passive radiators.

Multiple ports are supported.

Vents can have pipe resonances.

Box stuffing has both absorbing and isothermal effects

Filter design

Active filters

- Linkwitz transform
- Low-pass order 1-4
- High-pass order 1-4

Pre-defined passive circuits for

- Passive low-pass order 1-4
- Passive high-pass order 1-4
- Conjugate link
- L-pad

Advanced network

- Freely configurable passive network

AC-bass

- Special output impedance of the amplifier to modify apparent mechanical parameters of the driver.

Response graphs

- Frequency response
- Driver response
- Vent response
- Driver and vent excursion
- Driver and vent velocity
- Box pressure
- Maximum output level (MOL)
- Amplifier voltage to achieve MOL
- Cone excursion and velocity at MOL
- Vent excursion and velocity at MOL
- Box pressure at MOL
- Overload margins:
 - Re power
 - Amplifier voltage
 - Cone excursion
 - Vent excursion
 - Vent velocity
 - Overall

- Driver and vent baffle steps
- Electrical
 - Impedance
 - Reactance
 - Resistance
 - Inductance
- Room gain

Phase, group delay and phase delay graphs for the above where it makes sense.

Room gain

A typical room gain is approximated for easy compensation during system design.

Graph options

- Graph axes are changed by dragging the mouse
- Axes can be linear or logarithmic
- Several systems can be compared in the same graph
- Wavelength axis, synchronized with the frequency axis
- The response graph can be made semi-transparent; this is very useful for comparison with other graphs.
- Snapping cursor for accurate readouts.
- Legend

Other

- Design suggestions for box volume and port tuning
- Export of response curves to a text file.
- Automatic web check for updates (can be disabled)
- Modest system requirements
- Affordable

Minimum system requirements

- 400 MHz PC system running Microsoft® Windows® 2000, XP or Vista.
- 10 MB of hard disk space

A demo version is downloadable from

<http://www.tolvan.com/basta>

On-line orders are safely managed by PayPal®

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