

# BassBox Pro Version 6

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BassBox Pro™ is a state-of-the-art speaker enclosure design program. It is used around the world by professional and amateur speaker system designers to design worldclass speaker boxes. BassBox Pro is very versatile and can be used to design speakers for a wide variety of applications including home hi-fi, home theater, car, truck, van, pro sound reinforcement, recording studio monitors, stage monitors, PA, musical instruments, etc.

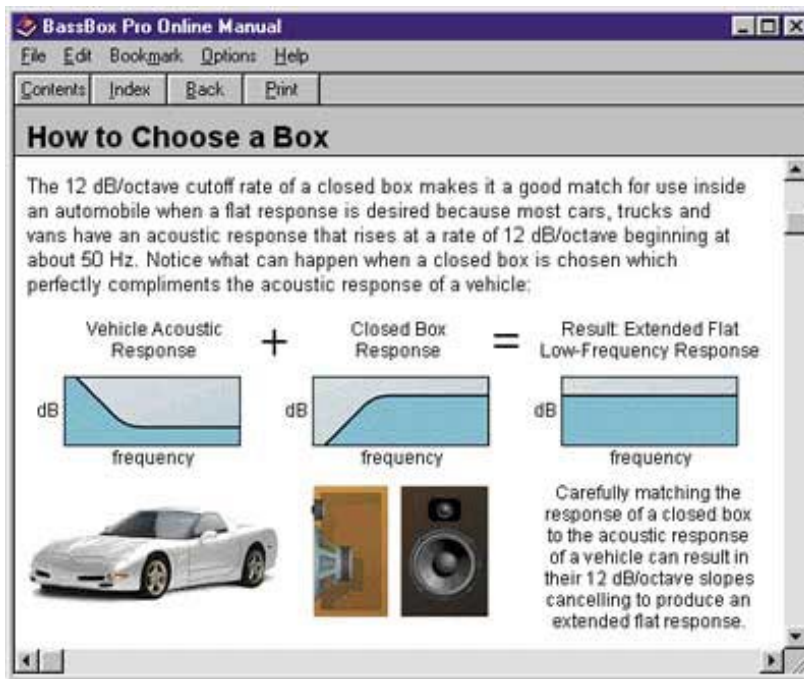


## Easy to Learn and Use

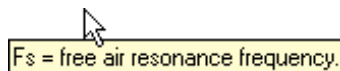
BassBox Pro has many features that make it very easy to learn and use. For example, when the program is first run, a Welcome window (shown below) will appear to help you configure the program and introduce you to its online manual.



The online manual (shown below) is extensive and contains most of the same information as the beautiful 364 page printed manual. Both the online and printed manuals are the best in the industry and include a "Box Designer's Guide", "Sample Designs" and "BassBox Pro Reference".

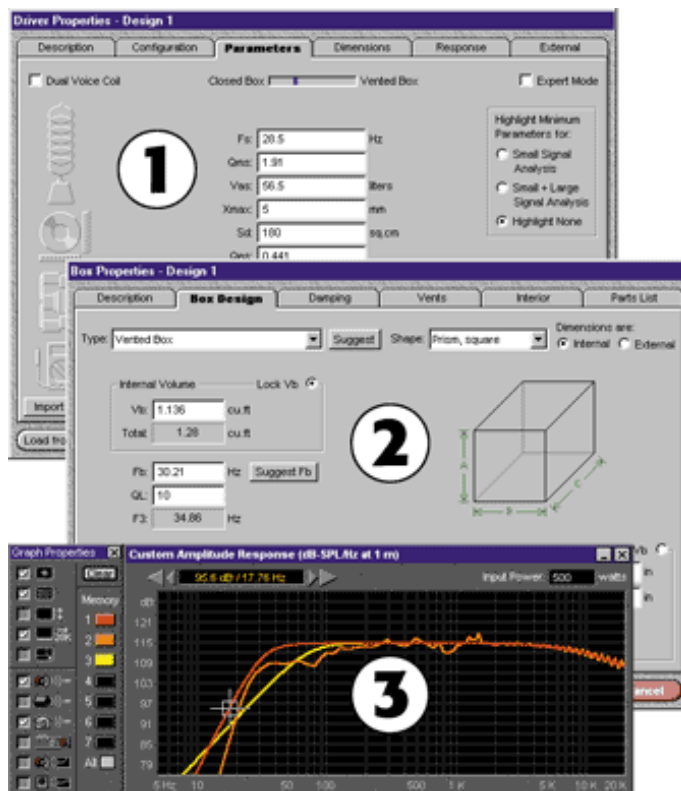


BassBox Pro also includes a "balloon" help feature (shown below). When the mouse pointer hovers over a control or label, a small text box will appear to provide a definition or explanation of the object below.



### Box Design is as easy as 1-2-3

There are many ways to begin a speaker design with BassBox Pro, including the use of its innovative Design Wizard. In general, speaker design involves the following steps:



1. Enter the driver parameters such as  $F_s$ ,  $V_{as}$  and  $Q_{ts}$ . BassBox Pro's driver database contains parameters for thousands of drivers.
2. Calculate the box volume and tuning. This is very easy with the program's helpful

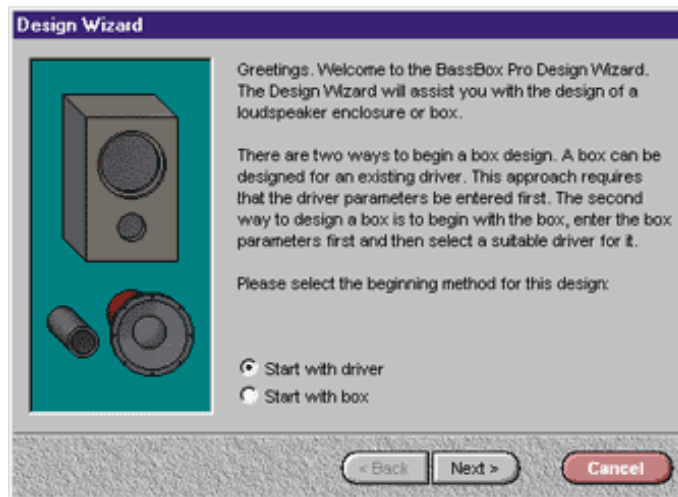
"Suggest" button. It will cause BassBox Pro to recommend a box that will produce a smooth bass response.

3. Evaluate the performance with the graphs. This can include the effects of the acoustical environment. For example, BassBox Pro can estimate the in-car response in the graphs to show how the speaker will sound to passengers inside a car.

Each box design can be saved and re-opened or re-used later. As many as ten different designs can be open at the same time. Box designs can also be duplicated so that driver or box information does not need to be re-entered.

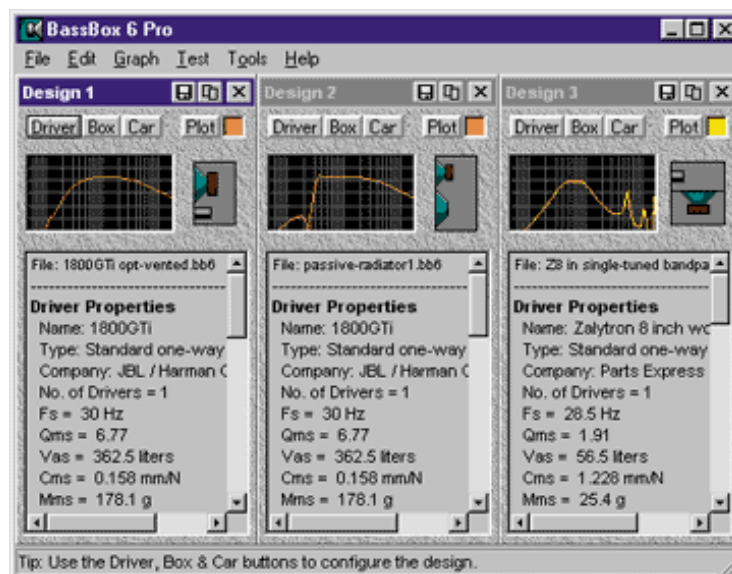
### Design Wizard

BassBox Pro includes a powerful Design Wizard (shown below) to help new users quickly design a speaker. It can start with either the driver or the box and then it will walk you through BassBox Pro as it prompts you for information in an orderly progression. In this way it serves as a "smart" assistant to help you use the program.



### Main Window

The centerpiece of BassBox Pro is its resizable main window (shown below) that includes a summary of all open designs. Up to ten designs can be open simultaneously.



A mini preview graph is provided for each design to show its amplitude response. These preview graphs are automatically updated whenever a design is altered, providing "real time" feedback. A small picture beside each mini graph displays the box type that has been selected (closed, vented, bandpass or passive radiator). A summary of the driver and box parameters is listed in a text box.

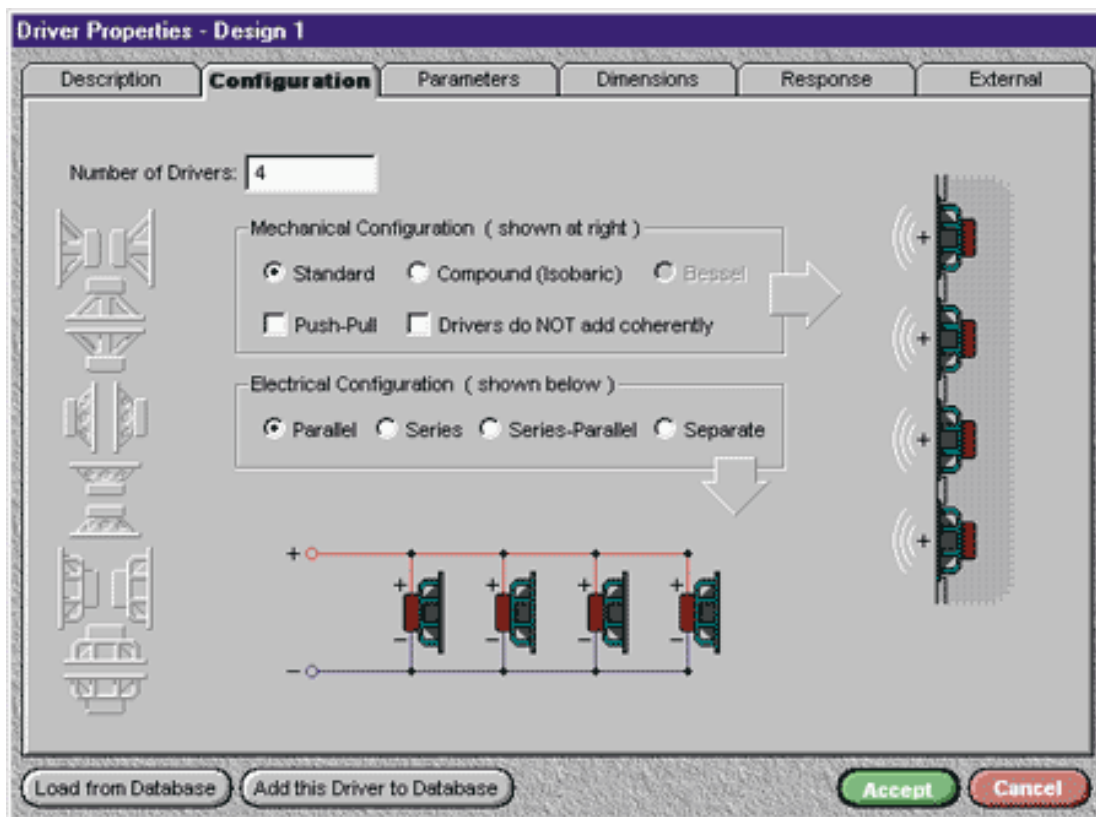


## Largest Driver Database

BassBox Pro includes the world's largest database of driver parameters! Users can add, edit or delete drivers and the database can be searched by manufacturer, driver model name, driver parameters or suitability for a closed or vented box.

## Driver Properties

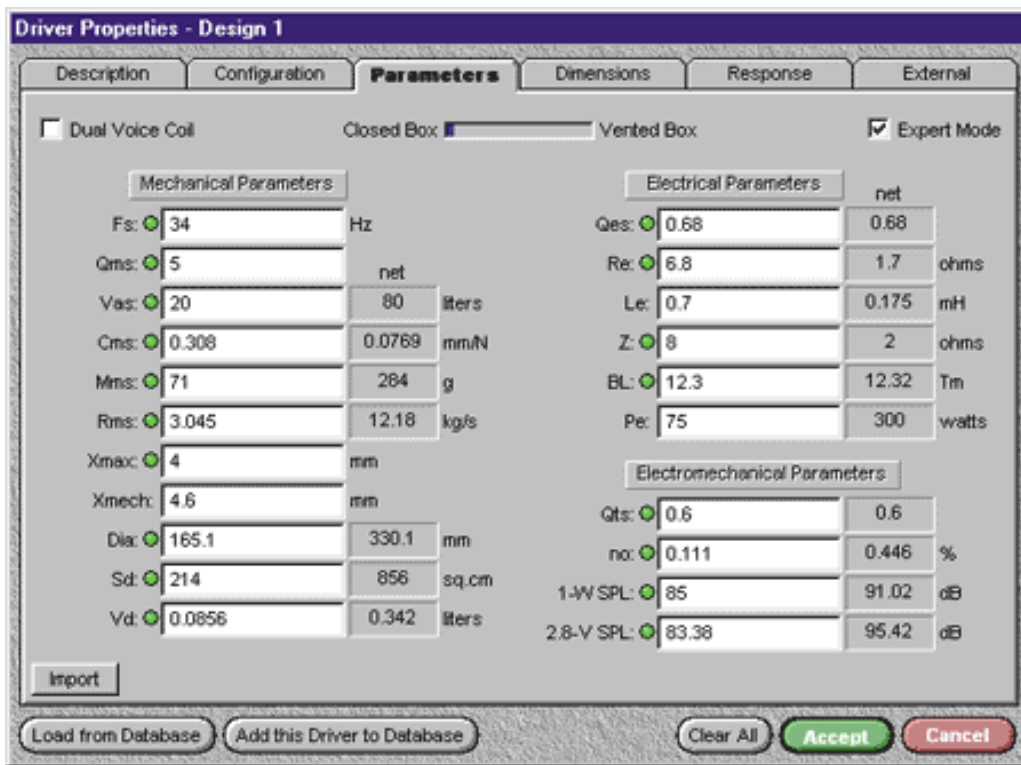
Information about a driver is contained in the Driver Properties window. The driver information can be entered manually, imported from another BassBox Pro or BassBox Lite speaker design file, imported from the CLIO or LAUD measurement systems, or it can be loaded from BassBox Pro's extensive driver database. Like many windows in BassBox Pro, the Driver Properties window uses tabs to organize the information. Three of its six tabs are displayed below. The first illustration shows the "Configuration" tab where the number of drivers and their mechanical and electrical configurations are set.



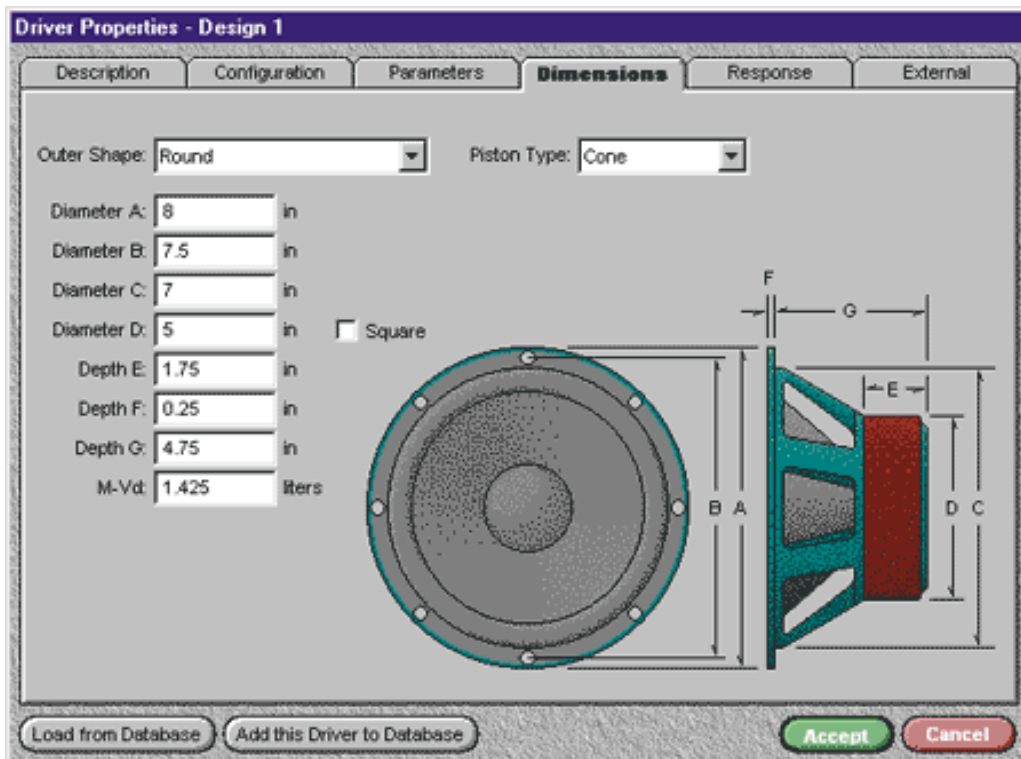
Notice above that the mechanical configuration settings include compound or isobaric and push-pull.

The second illustration shows the "Parameters" tab containing the driver's Thiele-Small and electromechanical parameters. "Net" parameters are displayed when more than one driver is specified. If the driver has a dual voice coil, separate parameters can be entered for each of the three voice coil wiring methods (separate, parallel and series). An "expert mode" is available to analyze driver parameters for errors.





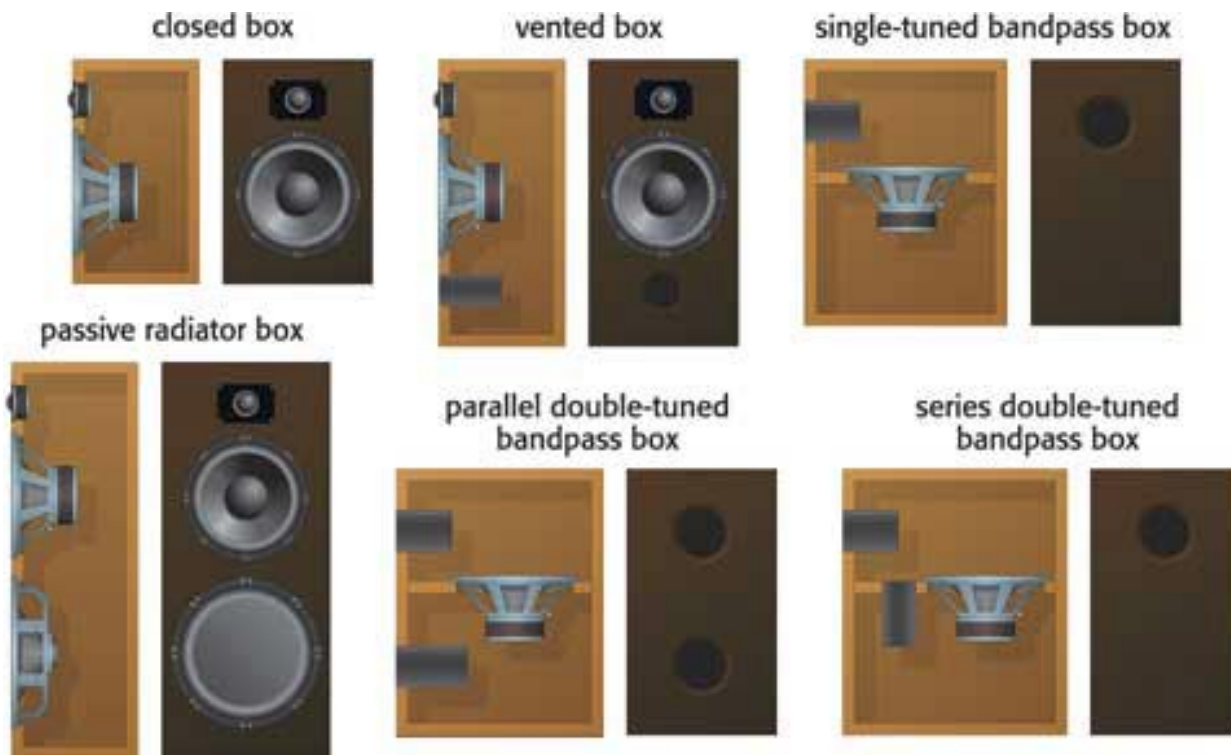
The third illustration shows the "Dimensions" tab containing the driver's outer shape, piston type, dimensions and volume settings.



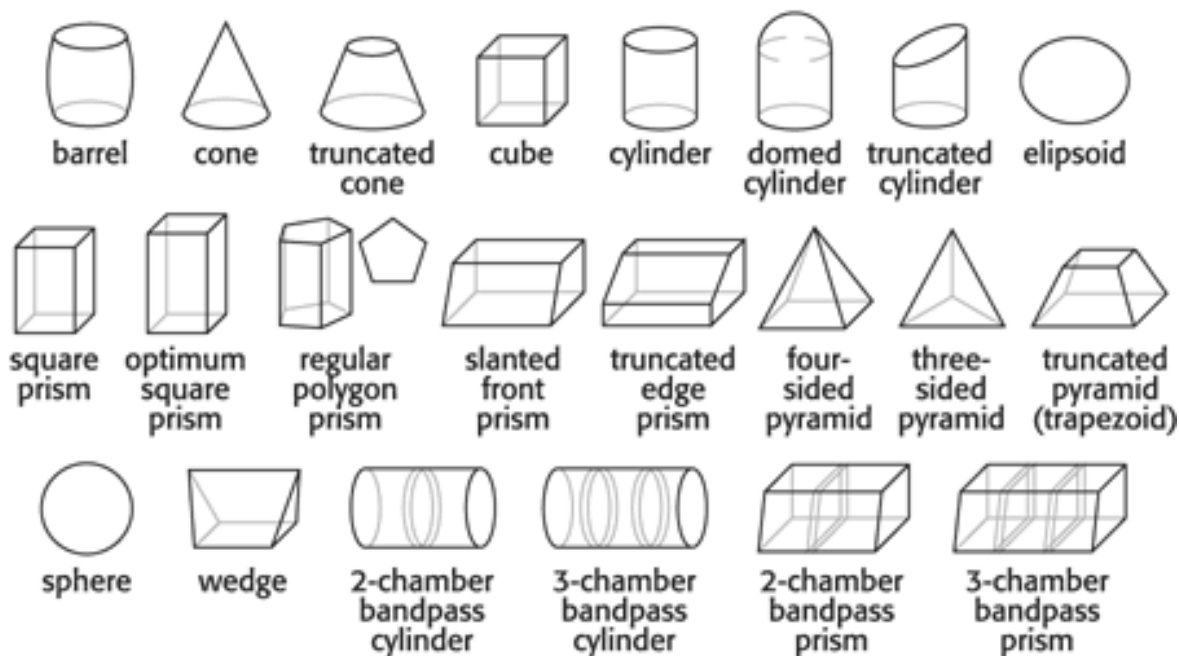
Not shown are the "Description", "Response" and "External" tabs.

### Design Many Different Box Types & Shapes

BassBox Pro models a wide variety of box types including closed, vented, vented with active HP EQ filter (B6), single-tuned and double-tuned bandpass and passive radiator boxes as shown below:

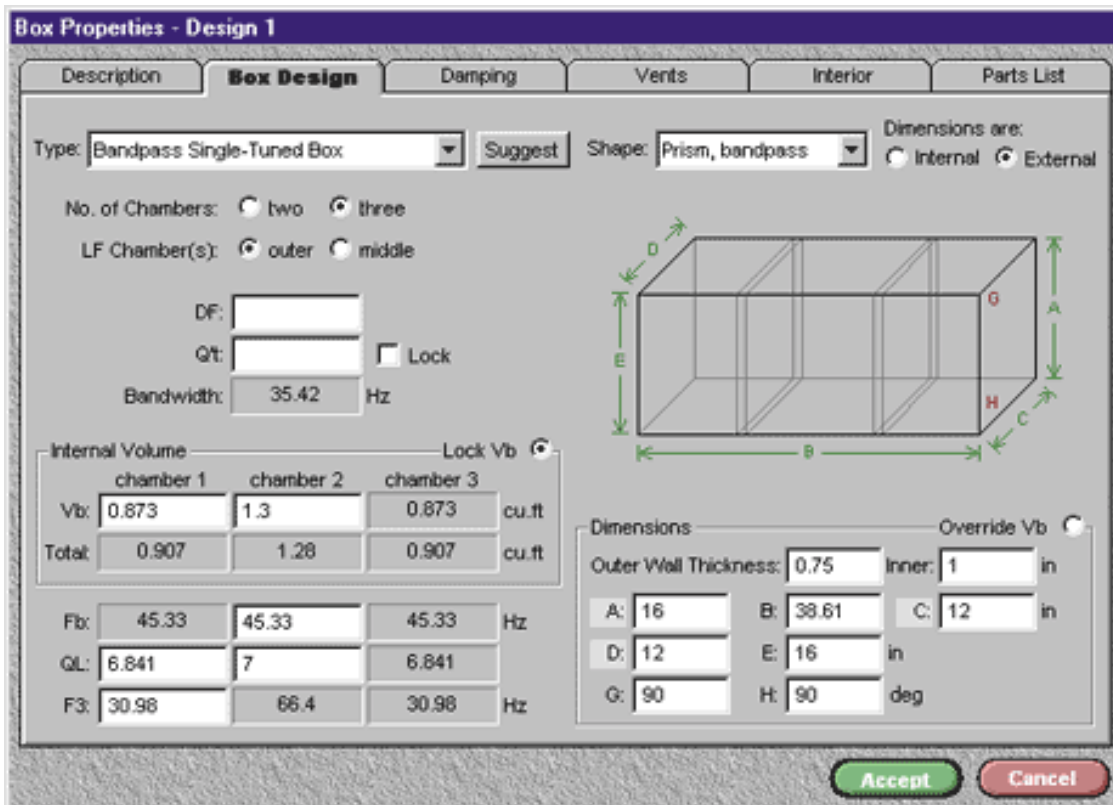


Twenty-two different box shapes are available as shown below:

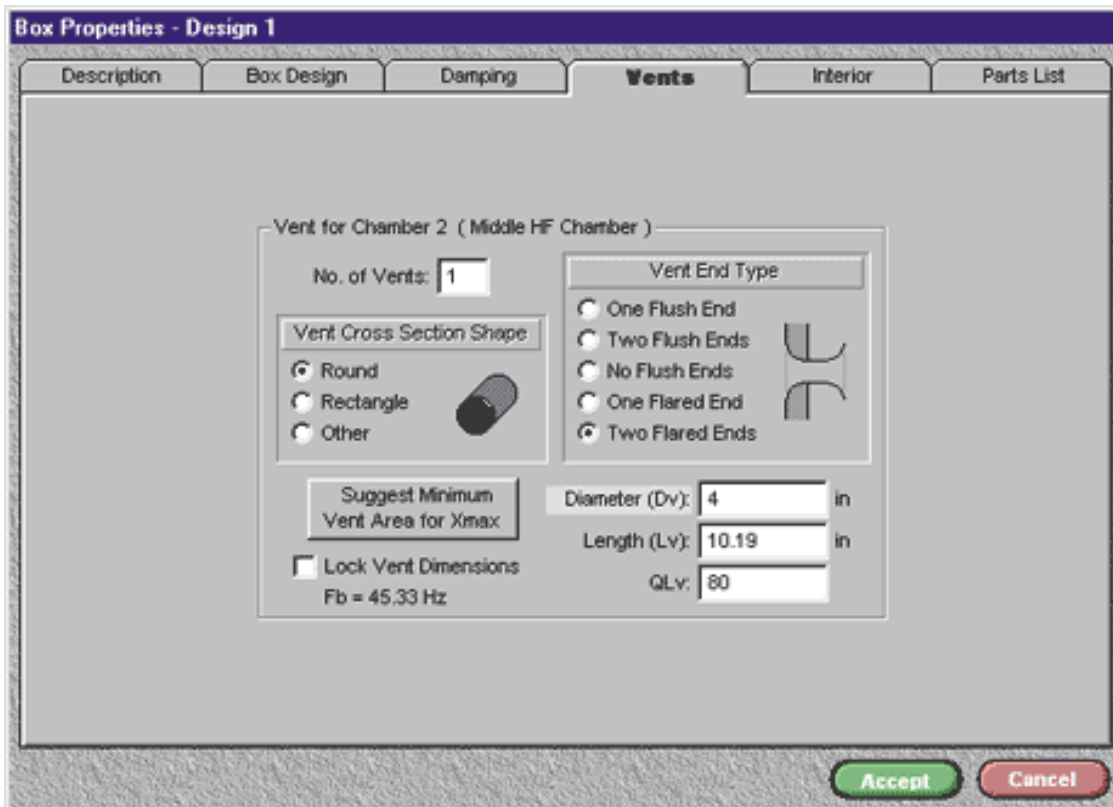


### Box Properties

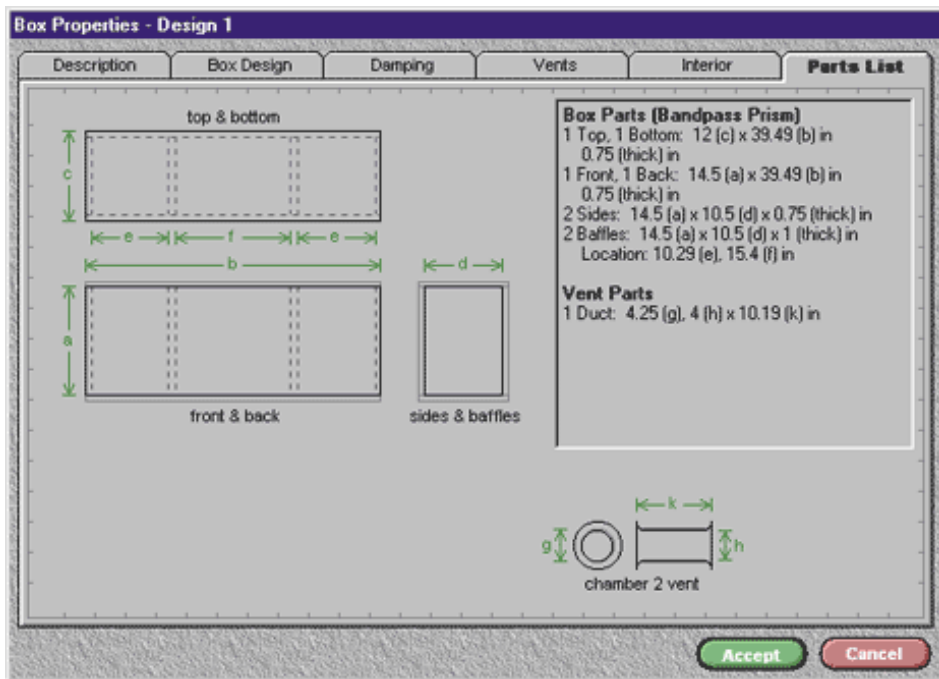
The information about the box is contained in the Box Properties window. Three tabs are displayed below. They depict a single-tuned bandpass box with three chambers (using two drivers). The first illustration shows the "Box Design" tab where the box type, shape, volume, tuning and dimensions are set. Notice that it includes a scaled drawing of the box. This drawing automatically updates in "real time" whenever the box is changed.



The second illustration shows the "Vents" tab which contains the vent parameters and dimensions. The vent parameters include the number of vents, their shape and end type. If a passive radiator box is selected, this tab will appear as the "Passive Rad." tab.



The third illustration shows the "Parts List" tab with a scaled drawing of each box part, a list of dimensions and, if appropriate, cut angles.

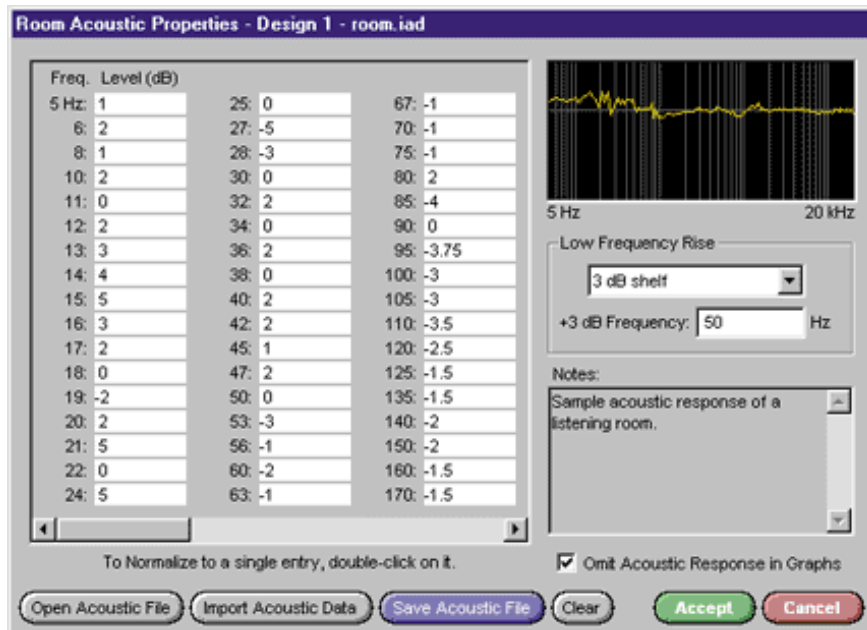


Not shown are the "Description", "Damping" and "Interior" tabs.

### Acoustic Properties

BassBox Pro accepts two different types of acoustic data. It can be entered manually or imported from several popular measurement systems (B&K, CLIO, IMP, LMS, JBL/SIA Smaart, MLSSA and TEF-20). This acoustic data is added to relevant graphs to improve their accuracy.

The acoustic response of the listening environment is entered into the Car/Room Acoustic Properties window (shown below). For example, the acoustic response of a motor vehicle interior can be entered to show how a speaker will sound to a passenger inside a car.



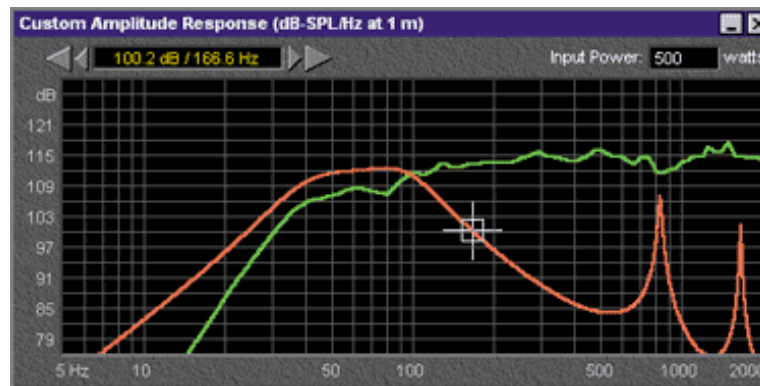
The normalized acoustic response of the driver is entered into the "Response" tab of the Driver Properties window (not shown). The driver's acoustic response is normalized to its predicted Thiele-Small response.

### Performance

BassBox Pro provides nine graphs to evaluate the performance of a speaker design. The Normalized Amplitude Response, System Impedance, Phase Response and Group Delay



graphs are provided for small-signal analysis. The Custom Amplitude Response (shown below), Maximum Acoustic Power, Maximum Electric Input Power, Cone Displacement and Vent Air Velocity graphs are provided for large-signal analysis.



The graphs include numerous options. There are two graph modes: a combination graph window which displays graphs one at a time for computers with low VGA resolutions and separate graph windows for simultaneously displaying multiple graphs for computers with higher XGA resolutions.

The graphs can display the "pipe" resonance of vents, the estimated piston band on-axis amplitude rise of a driver and the estimated diffraction response shelf (of selected box shapes) that can result from the front-panel circumference of the box.

Other options include two vertical and two horizontal scales, seven graph memories, cursor and an export (copy) function via the Windows clipboard.



### Custom Printouts

Custom printouts can be created which include the box and driver parameters, a three-dimensional box drawing with internal and external dimensions, a parts list with two-dimensional box part drawings, dimensions and cut angles, an English fraction-to-decimal conversion table, wiring diagram with an external network parts list and nine graphs. A custom logo or graph can be imported and printed in the title block.

### Test Procedures

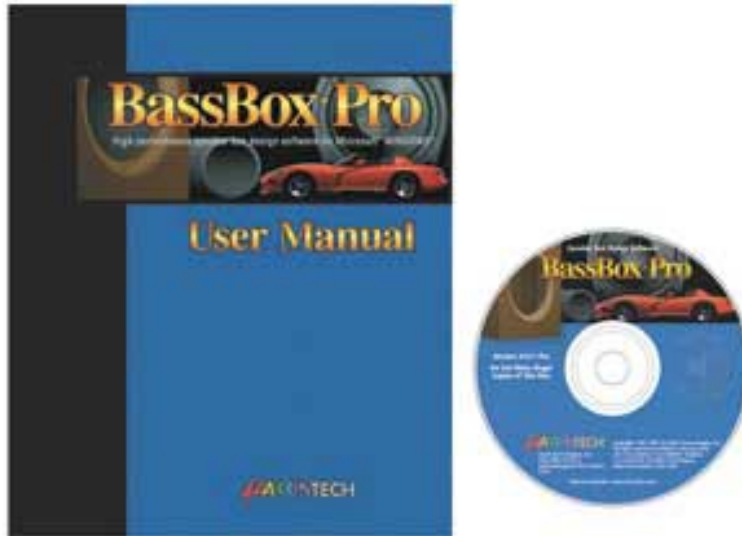
Driver and passive radiator test procedures are included in the program to help you measure most Thiele-Small parameters. (Requires test equipment such as: sine wave generator, frequency counter, power amplifier, 1000 ohm 2-watt resistor, voltmeter, ohmmeter, test box.)

### Passive Network

A passive network (high-pass, band-pass or low-pass filter, impedance EQ network and/or L-pad) can be entered or imported from X-over Pro to display the system impedance.

## Compatibility

BassBox 6 Pro can open speaker design files from BassBox 6 Lite and older versions of BassBox (versions 5.1, 5.0, 4.0 and 3.0). Passive network information can be imported from X•over 3 Pro.



## BassBox Pro includes:

A BassBox Pro license includes a CD-R disc with the BassBox Pro computer program, driver database and online manual. A beautiful 364 page printed manual is also included. (Note: The program is also available on 3.5-inch 1.44 Mbyte diskettes.)

## System Requirements

Microsoft® Windows® 95, 98, Me, 2000 or Windows NT4 and a compatible computer (IBM® PC with a Pentium processor or equivalent) with at least 16 Mbytes of RAM (32 Mbytes is recommended), 35 Mbytes of free hard disk space and a CD-R compatible CD-ROM or DVD drive. Also, the Arial and Symbol TrueType fonts must be installed (both fonts are a standard feature of Windows).

\*All prices are in U.S. dollars and do not include shipping and handling charges, sales tax, import duties or bank transfer fees.