*Bag End Infrasub-*18 Subwoofer

Hear low frequencies as they were meant to be heard

By Wade McGreggor

Authority. That's what low frequencies give to a mix. How can you be sure that you have the lowest tones just right? Infrasub. Check it out...

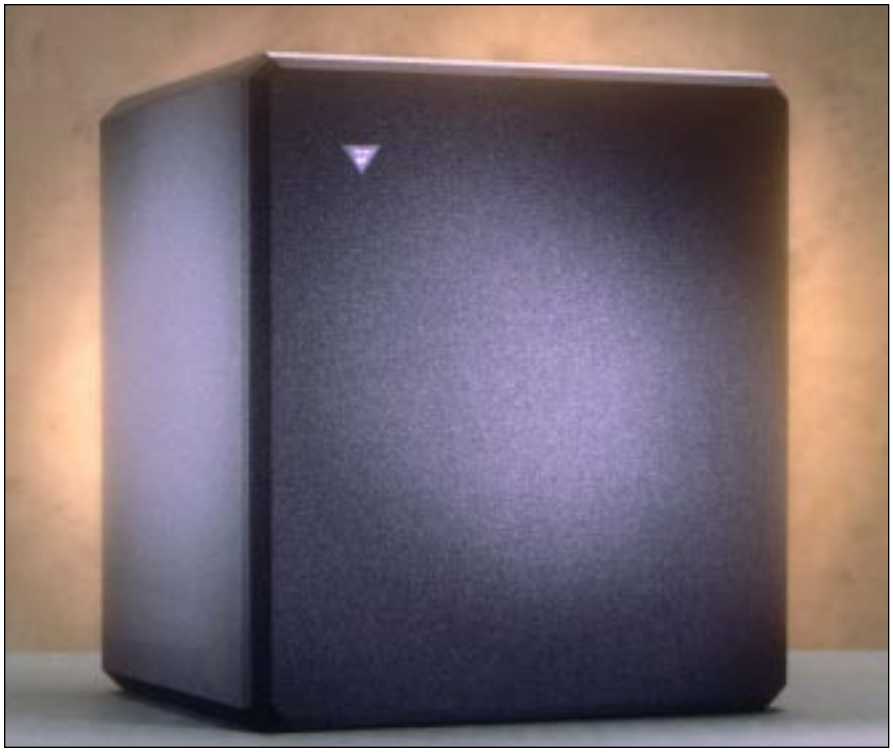
The powered Bag End Infrasub-18 offers both line-level and loudspeaker-level connections that should allow this unit to easily fit into almost any monitoring situation. The self-contained power amplifier is capable of driving the power-hungry ELF (Extended Low Frequency) 18-inch driver to significant sound pressure levels while maintaining tight, solid, building-shaking bass. The driver is mounted in a sealed enclosure, setting it apart from the more common vented sub-bass units. Not only does this design sidestep problems such as port noise (chuffing) and resonant peaks in the frequency response, it also ensures that the unit is highly damped. The result not only reveals low frequencies that you may never have heard before, but also those frequencies are clearly defined in pitch and tone. You then know exactly how your mix is going to disc.

Beware: The bass that you hear on most other monitoring systems will sound colored and boomy by comparison. You will have to adapt to mixing with this new view of the audio spectrum. You may also find that you can mix at lower volumes, simply because you have the confidence that very low frequency problems will now be more audible.

The ELF processor is built into the active circuitry of the Infrasub-18. This process utilizes the band below the driver/cabinet resonant frequency by boosting the level 12 dB-per-octave through this frequency band. The result requires a driver that can handle the large excursions (cone travel) this demands and a power amplifier that can provide the voltage swing necessary to meet this need. The Infrasub-18 package provides all of these elements in a single convenient package.

A unique (to ELF) concealment circuit ensures that the driver does not exceed its excursion limits by sliding a high-pass filter up in frequency as program levels demand. The real "trick" of the ELF process is making this dynamic filter unobtrusive in operation. The output level of the unit at 8 Hz is limited, so don't expect this sub to have the power of a massive subwoofer system. In fact, if you were playing back audio with 12 Hz energy that demanded the full 400 watts from the amplifier (boosted 18 dB by the ELF dual integrator), the unit will have the equivalent of 7 watts at the 95 Hz (crossover) frequency. This is the nature of the power-hungry ELF process. However, the audible result will be more musical and better defined than any other (non-ELF) sub you can find for most project studio monitoring applications.

Connection in the unit is either through unbalanced RCA connectors or, if



MANUFACTURER'S SPECIFICATION

Low Frequency Transducer: 1 EL-18P 18-inch cone
Amplifier Output Power: 400 watts continuous sine wave
ELF Module: Patented 8-Hz Dual Integrator
Finish: Black matte vinyl laminate
Grille: Black nylon cloth on frame
Dimensions: 23.5 H X 21.25 W X 18.25 D (inches); 59.7 x 54 x 46.3 (cm)
Weight: 92 lbs. (41.7 kg)
Input connectors: Left, Center, and Right channel line-level RCA jacks, Left and Right channel speaker level spring terminals
High-Pass Filter Outputs: Left, Center and Right line-level RCA jacks 12-dB-per-octave, factory set for -6 dB at 95 Hz
Frequency Response: + or - 3dB from 8 Hz to 95 Hz (2 p Steradians), ELF system -6 dB frequency 95 Hz (not adjustable)

you have a very simple monitor chain, directly from the loudspeaker lines in parallel with your full-range loudspeakers. Both connections will actively sum the left and right channels to provide a mono subbass output. The line-level connections also include outputs that are high-pass filtered for connection to the inputs of your full-range loudspeaker amplifier. If you must use the loudspeaker-level inputs, no filtering is available for the full-range loudspeakers. Unfortunately, this will cause these loudspeakers to work too hard trying to also produce the very low frequencies and may cause destructive acoustical interference depending on the physical relationship between the two full-range loudspeakers and the Infrasub. With the high-passed, line-level output these interference effects (between the sub and the full-range devices) are only significant near the crossover frequency.

Bag End includes a concise manual-printed on the metal rear panel of the cabinet-with each unit. The instructions and technical data are right where you need them while making your connections and initial adjustments. Once the unit is in operation, the manual is safely stored where it is hard to loose (it is possible to rub off the printing), but handy if you need to make any changes (assuming you can still get to the rear of the unit).

The Bag End Infrasub-18 is a powered 18-inch subbass loudspeaker system capable of ruler flat response to 8 Hz, yet small enough to fit into practically any project studio. Using the patented ELF processor to operate the driver below resonance, this sub has authority!

MANUFACTURER:
Bag End Loudspeaker Systems
22272 Pepper Rd.,
Barrington, IL 60010.
Tel: 847-382-4550.
Web: www.bagend.com.
Circle EQ free lit. #110.
PRICE: $1495

Wade McGregor is a consultant for Mc2 System Design Group, and acoustical consulting firm based in North Vancouver, BC. For more info visit their home page at www.mcsquared.com.

End of review

SPECIFICATIONS

Enclosure: 3/4" MDF

Low Frequency Transducer:
EL-18P 18" Cone

Amplifier Output Power:
400 Watts continuous sine wave

ELF™ Module:
Patented 8 Hz dual integrator

System Type: 3 ft^3 Sealed box

Driver Nominal Impedance: 4Ω

Input Connectors: Left, Center, and Right channel line level RCA jacks

Left and Right speaker level spring terminals

Hi-Pass Outputs: Left, Center and Right line channel level RCA jacks

12dB per octave, -6dB at 95 Hz

Frequency Response:
±3dB 8 Hz to 95 Hz (2π Steradians)

ELF™ system -6 dB frequency 95 Hz (not adjustable)

Overload Protection:
Preset threshold Concealment™ circuitry

Finish: Black matte vinyl laminate

Grille: Black nylon cloth on frame

Dimensions:
23.5"h x 21.25"w x 18.25"d
59.7cm x 54cm x 46.3cm

Weight: 90.5 lbs. - 41.05 kg

Shipping Dimensions:
30" x 27" x 23.5"
74.3cm x 67.3cm x 59.1cm

Shipping Weight: 103 lbs. - 46.72 kg

OPERATING INSTRUCTIONS

If you have a line level source (such as a preamp output, surround processor output, or tape monitor insert points on a receiver), send a full frequency range signal via shielded cables to the RCA jack line level inputs. The INFRASUB will send the Left, Center, and Right channel signals to the built in Hi Pass filters. The line level outputs of the Hi Pass filters are available at the Left, Center and Right channel RCA jacks. Send these signals back, via shielded cables, to the inputs of their corresponding power amplifiers.

You will achieve a higher fidelity sound by connecting your INFRASUB to the full range outputs from your surround sound processor and not the low pass subwoofer output. Set the surround sound processor in the full range Left and Right speaker mode with no subwoofer for this configuration. If this mode is not available, it is ok to connect the INFRASUB to the subwoofer output directly.

If you have a speaker level source (the output of a power amplifier), send a full frequency range signal to the Left and Right spring terminal speaker level inputs. As the impedance of this input is high, it is not necessary to use heavy gauge speaker wire for these connections. We recommend running separate cables in parallel with your normal speaker wires connected either directly to your amplifier outputs or the terminals on your Left and Right speaker enclosures. Please take care to maintain the correct signal polarity by connecting the red or + terminals from your amplifier or speaker to the red speaker level inputs on the INFRASUB. Note that there are no Hi Pass filtered speaker level output signals available. In this configuration, best results will be achieved when using satellite speakers with limited bass response.

The INFRASUB combines the signals from all of the inputs, sends them through the ELF™ dual integrator and the built-in 400 Watt power amplifier to the specially designed Bag End EL-18P 18" driver. Use the VOLUME control to match the level of the INFRASUB to your satellite speakers. Use the POLARITY SWITCH, if necessary, to reverse the polarity of the INFRASUB. This can be helpful to achieve a seamless blend between the sound of the INFRASUB and your satellite speakers.