



AT-1

High Performance Floorstanding Loudspeaker



Introduction

At Atlantic Technology, a cornerstone of our mission is to introduce A/V products that embody innovative approaches to better serve the needs of our customers. Everything we do is an attempt to markedly improve their acoustic performance, make them easier to install and use, or increase their value by improving the cost-to-performance ratio.

Every once in a great while, a truly groundbreaking product comes along that accomplishes all of these goals at once. The new AT-1 H-PAS™ tower speaker is such a product.

The AT-1's patent-pending H-PAS bass system (Hybrid Pressure Acceleration System) combines elements of several speaker technologies—bass reflex, acoustic suspension, inverse horn, and transmission line—in a unique configuration to deliver powerful low frequency response that absolutely breaks what was previously thought to be the “Iron Law” of loudspeaker acoustics: the notion that you couldn't have deep bass extension, good system sensitivity, and reasonable enclosure size all in one design. “Pick any two at the expense of the third,” went the old cliché. H-PAS changes all that.

“The AT-1 has an amazing bottom end combined with other qualities that will put many a more expensive speaker to shame.”

– Thomas J. Norton, *Home Theater* magazine

“The Atlantic Technology AT-1 H-PAS speakers' overall performance/value quotient is difficult to overstate.”

– Daniel Kumin, *Sound&Vision* magazine

H-PAS™

A Completely New—and Better—Way to Generate Bass

Using a unique cabinet design (see left), the elements of the combined speaker technologies are cascaded one to another in such a manner as to pressurize and accelerate the low frequency “Back waves” as they travel through the cabinet. The precisely calculated cabinet chambers and baffles produce an “acoustic crossover” from the bass drivers to the front vent, with the very lowest frequencies radiated by the vent, and the upper bass and midrange regions being radiated directly from the woofers’ cones.

H-PAS does not require the use of special drivers, any kind of on-board electronics or outboard equalization. It is a purely passive system, completely compatible with all stereo amplifiers and AV receivers.

As a matter of fact, the central tenant of H-PAS design is to use high-resonance bass drivers, not heavy, inefficient low-resonance drivers. The internal matrix of the cabinet captures the backwave of the driver below its resonance and pressurizes and accelerates it before it exits the vent. The internal workings of the cabinet are such that the low frequency efficiency of the system actually increases with decreasing frequency—exactly the opposite of conventional system behavior, where output below resonance drops rapidly. The cabinet produces a reciprocal output of the high-resonance drivers’ natural roll-off, yielding flat acoustic response to well below that of conventional designs using like-sized drivers and cabinets.

The use of lighter, higher-resonance woofers also means that the H-PAS system exhibits lightning-fast transient response and incredible bass detail compared to the slower, high-mass, low-resonance drivers usually needed to achieve reasonable deep bass extension in ordinary speakers.

In addition, the low frequencies travel through an internal passive resonance/harmonic distortion line filter to further clarify the sound. As a result, the H-PAS design delivers extended deep bass, with high output levels, and exceptionally low harmonic distortion.



Proprietary H-PAS algorithms

Design Details

The Atlantic Technology AT-1 utilizes two 5¼-inch drivers in an enclosure of approximately 1.6 cubic feet to produce bass that extends to 29 Hz (-3dB) at Sound Pressure Levels that exceed 106dB. Bass harmonic distortion is under 3 percent. Comparable performance in a conventionally designed loudspeaker system would require bass drivers of at least triple the size in an enclosure at least twice as large. The AT-1 also uses an exceptionally advanced 1⅛-inch Low-Resonance Tweeter (LRT™) that affords a lower crossover frequency (2000 Hz) than is normal in a two-way system.

The result is exceptionally wide dispersion through the midrange without the upper-midrange “beaming” normally exhibited by woofers in a two-way speaker. The tweeter’s oversized 4 mm textile surround—rarely, if ever, found in a tweeter—allows for long excursion, and very high power handling. As innovative as the H-PAS design is in the bass region, the AT-1’s tweeter is equally impressive in the higher ranges. This is a total loudspeaker system of amazing capability and accuracy.

All the crossover components are the very highest quality, and adhere to strict 1% value tolerances, to ensure the best sound possible. An impressively innovative cabinet bracing architecture, called CDFP™ (Cross Design Free Flow), lends the cabinet great rigidity and inertness, without restricting the critical internal airflow that is so important to the H-PAS’s remarkable bass response.

This new bracing configuration was the result of Atlantic’s advanced computerized cabinet vibration analysis coupled with critical listening tests.



Exceptionally advanced 1⅛-inch Low-Resonance Tweeter (LRT™)





Custom brushed aluminum feet with spikes



Gratuitously over engineered crossovers



Smoked glass top



Heavy-duty, bi-ampable 5-way binding posts



3-position High Frequency Energy switch with gold-plated contacts



Low profile wire management brackets

Finish and Features

The Atlantic Technology AT-1 speaker is finished in a gloss black metal-flake paint, applied in a multi-coat process and hand polished for a luxurious appearance. A 3-position high-frequency energy switch is included, as are high-quality dual 5-way binding posts, to allow for bi-amplified operation when ultimate performance is the goal. Cast aluminum feet with adjustable height floor spikes complete the package and ensure a solid, vibration-free foundation.

THE BOTTOM LINE

For most audiophiles, listening to a pair of AT-1's for the first time on demanding material with extremely low bass is a bit of a shock. Loudspeakers of this modest size with a pair of small 5 1/4-inch woofer-midrange drivers just "aren't supposed to do that"—shake the room. But the AT-1's deliver that kind of impact. Even at moderate levels, there is a degree of bass power combined with acoustic detail rarely experienced in speakers of any size or price. In the case of the AT-1, hearing is believing.

Specifications

	Atlantic Technology AT-1
Type:	H-PAS, M-T-M
Drivers	Woofers: (2) 5 1/4" (135mm) long-excursion GLH* cone Tweeter: 1 1/8" (28mm) low-resonance soft dome with 4mm oversize long-throw surround and integral back chamber/heatsink
Frequency Response:	29-20kHz, +/-3dB
Nominal Impedance:	6 ohms
Crossover Frequency:	2kHz
Crossover Type:	Parallel, 2nd-order LP, 3rd-order HP
Sensitivity:	89dB
Recommended Amp Power:	20-200 Watts RMS
Dimensions: (W x H x D):	227 x 1041 x 348mm (8 7/8 x 41 x 13 3/4") (Feet add another 1" to Height)
Weight:	54 lbs (25 kg) ea.

*Graphite-Loaded Homopolymer



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