

Technology Overview: Part One

XBL

XBL is our patented (US Patent 7,039,213) motor technology that greatly flattens the BL curve of your driver, reducing distortion. XBL also provides more linear throw than any other motor design, while keeping the efficiency as high as possible. The result is unrivaled clean output, wider bandwidth and lower distortion for every Watt. XBL scales from the smallest driver to the biggest voice coil.

ARACHNID SUSPENSION

Redefining the spider, this patent pending design provides the highest linearity in suspensions, while simultaneously vastly reducing moving mass and eliminating the need for discrete tinsel leads. First proven on our legendary Parthenon driver, this technology is now available for use in nearly any moving coil-style transducer.

REVSURROUND

A new twist on the surround. A simple but significant change allows this patent-pending design to properly terminate the edge of your cone, and dramatically flatten the compliance curve of your surround. It can easily be molded into any foam or rubber surround. And it can work with any cone.

Solution Focus Two: Shallow Transducers

Let's face it – thin is in. The need for flat, in-wall speakers is exploding, yet sadly few companies can truly make state-of-the-art shallow transducers. ADI was tasked with designing two new shallow-mount transducers. One was a 100mm diameter wideband midrange with a true flat diaphragm, high stroke, and as much bandwidth as we can offer. The results are shown here:

Bandwidth is extended from 100 Hz to 20 kHz, and there's no limit of SPL with the

12mm of linear stroke.

The overall driver is just a scant 42mm deep, and has a true flat honeycomb diaphragm.



HORIZON 100 Mid – 100mm diameter wideband driver

Another design called for a true in-wall mounted subwoofer – no more than

90mm deep. Yet this was to be a high output, high-power-handling 12" monster. The required output



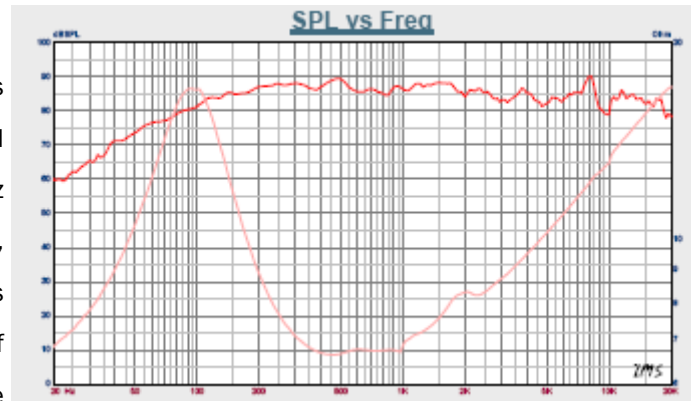
The LAW – 12" In-wall Subwoofer

levels called for 32mm of linear stroke, 40mm of mechanical throw, and 500W of power handling. And optimized to work in a tiny 16L sealed box.

We re-thought the entire concept of a driver. Every part of the driver was optimized to provide maximum

performance in minimum space. A massive 64mm voice coil handles the power, and the use of our technologies provides all the required stroke, with just 88mm of mounting depth from mounting flange to back of back plate.

The end result yields an in-box F3 of 32 Hz, a Qtc of 0.8 and the capability to reach 100 dB SPL at 20 Hz. And still all fit flush with drywall in a standard stud-wall cavity.



Technology Overview: Part Two

CUAL INDUCTANCE TREATMENT

Flattening and linearizing your inductance is crucial to wideband operation. But it takes more than just throwing sleeves on the polepiece; it takes careful optimization of location, material and shape used to create superior performance over stroke, frequency AND power.

AFACT

A revolutionary patent pending cooling approach that does for thermal issues what XBL does for BL linearity issues. **AFACT** (Asymmetric Forced Air Cooling Technology) provides real unidirectional airflow through your transducer, resulting in a dramatic increase in power handling. AFACT can easily double the thermal limits of your existing design in a completely foolproof method. AFACT is included on the full PASUB line of prosound drivers, the first prosound drivers with unlimited peak power handling rating.

BEST TWEETERS

True Beryllium and Beryllium-alloy tweeters. Beryllium offers extremely high stiffness with very low weight, making it a near-ideal solution for tweeters. With proprietary blends of aluminum, magnesium and copper, ADI tames the breakup modes but keeps all the strength and reduction in mass, yielding higher bandwidth, lower distortion and higher efficiency.

Solution Focus One: Microdrivers



This new 20mm x 40mm oval speaker was designed for a world-leading laptop vendor. The requirements were for a wideband driver with usable low end extension more than an octave lower than existing market offerings. And of course, price was critical, too. Enter ADI. After evaluating of the packaging, price, and performance requirements from the client, we designed this unit. The results? Using our XBL technology, we achieved usable output down to 200 Hz, power handling of 4W, and an astounding 3.2mm of linear stroke in a package just 10mm thick. And top end bandwidth extension to 20 kHz is maintained. All at a price within the client's budget.

Fs: 380 Hz	Znom: 4Ω
Qms: 2.88	BL: 1.2 N/A
Qes: 4.33	Xmax: 3.2mm
Qts: 1.73	Pmax: 4W
Vas: 23 mL	SPL: 85 dB/0.5m

Doing Business Where You Do Business

ADI maintains offices in Southern California, Washington State, and Shanghai, China to provide support where you need it.

Our staff is also available to travel to your facilities to speed your design, development and production cycle.



Who We Are

Acoustic Development International is an outstanding group of engineers and logistics and production professionals. After all, there's no benefit to using the best products if they can't be delivered on time and with high quality. We provide fullrange drivers, tweeters, midranges, woofers, and subwoofers as well as advanced technologies; all depending on your needs.

While we're known primarily for innovative technologies and outstanding transducers, we also provide complete system solutions for our clients. We can provide amplification, cabinetry, packaging and full turn-key solutions. Contact us today with your requirements and see what we can do for you!

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The ADI Advantage Technology Overview

Winter 2008

www.acousticdev.com

Technology: the Heart of Design

FACT: a moving coil loudspeaker contains just 13 parts

(basket, gasket, cone, surround, spider, tinsel lead, terminals, former, voice coil, top plate, magnet, backplate, and polepiece).

What sets your design apart from all others is the technology that goes into these basic 13 parts. Material selection and design are important, but of even greater concern is the blending of these parts. Just as a master chef takes ordinary spices and creates an exquisite feast, a skilled loudspeaker designer can take seemingly ordinary parts, and with the right blend of technologies, create an aural masterpiece.

That's where ADI comes in — our superior technologies have proven, measurable results. And they've been refined to be easy to integrate into any design, and assembled in almost any factory.