

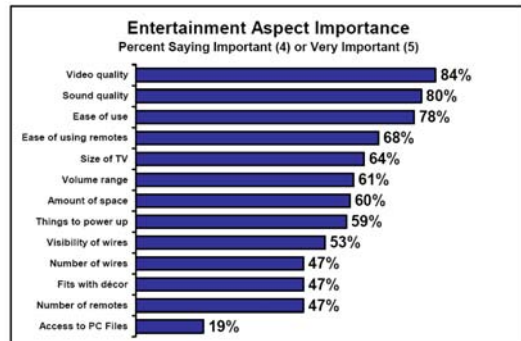


Amplified Convergence Platforms Market Overview

Empowering All-in-One Platforms with Scalable High Quality Audio Amplifiers

The world of media has evolved rapidly in the last decade and we now have a full range of digital media sources from MP3 portables, to satellite TV, to over the air HD, to new high definition player formats. Consumers are embracing this range of digital media formats with increasing vigor and an expectation of improving quality. Previously the platforms and their content were stand-alone, but increasingly consumers are demanding coordinated playback across multiple venues without being tied to specific hardware. We live in a connected digital media world where consumers want to play what they want when they want, and now expect that playback to be where they want. Convergence all-in-one platforms offer the only means of delivering upon this growing consumer demand. The open question is what form that platform will take?

One place to start in defining the future of digital media playback and platforms is to look at where consumers feel underserved now. The Consumer Electronics Association (CEA) performs periodic end-user surveys to gauge what consumers are thinking and where they plan to spend their next electronics dollars. What is surprising in this survey result is the importance of features beyond video such as improving audio quality, simplifying remotes, wires, and reducing overall volume of the equipment. The need to handle the full range of digital media content is best handled by a PC-like platform, but with the added twist of an integrated audio amplifier to address the concerns expressed regarding multiple remotes, wiring, number of boxes, etc. A strong contender for this platform is the Amplified Entertainment PC (A-EPC). As an all-in-one convergence platform the A-EPC addresses the majority of concerns brought out in the CEA survey of consumer attitudes. The addition of an internal audio amplifier increases value greater than simply the value of the displaced AVR or receiver.



Base: U.S. Online Adults
Question 28: Generally speaking, when it comes to home video/audio entertainment systems, how important or not important are the following aspects to you?

A number of technical issues have kept audio amplifiers from being integrated in the past. Traditional analog amplifiers are known as Class-A/B designs that require bulky heat sinks, as well as large power supplies. Noisy fans are required in systems with such poor power efficiency to keep the internal temperature down. The noise alone is generally enough to disqualify the solution for use in a living room environment. Additionally, audio amplifiers are required to deliver large amounts of power to multiple speakers. A 5-channel amplifier with 200W peak drive capability would need 1000W plus a bit more for overhead losses to meet this demand. CE devices are generally built with 300-350W power supplies that would not tolerate this load without dropping the power supply voltage to the core electronics. Fortunately, D2Audio has developed solutions for all three of these fundamental problems to empower a new A-EPC class of platforms.

D2Audio specializes in Class-D amplifiers that achieve remarkable 93% power efficiency for A-EPC systems. This means that for every 100W of power delivered to the speakers, less than 7W is dissipated by the amplifier. Because of the way audio power is distributed between channels, the overall amplifier thermal dissipation inside the enclosure will typically be below 20W. This compares with the 40% to 50% efficiency of Class-A/B amplifiers which dissipate as much power inside the enclosure as they deliver to the speakers. The use of advanced Class-D technology by D2Audio is one of the keys to effective audio amplifier deployment in multi-functional platforms. D2Audio also has a long history of high density module development which has been put to use building the very tightly packed offerings that fit within the small form factor platforms acceptable to consumers. D2Audio also employs a full DSP at the heart of the D2Audio® Digital Audio Engine™ that powers the various solutions in this space. This DSP is used to both monitor and control the amplifier power drawn from the main system power supply. Without real-time power monitoring and control, the system would be prone to reset every time a loud sequence was played. This patented technology from D2Audio is unique and only available to D2Audio customers.

The 1st generation of D2Audio technology for the A-EPC was deployed as part of the AMD Sponsored BVI Platform focused on extending the AMD LIVE! digital media and platform thrust. The early deployment of the technology can be seen in the Alienware Hanger18 that was launched at the end of 2006. Other brands are completing the development work on additional platforms that will be released in the second half of 2007. These new platforms will add to the A-EPC market, as well as expand the uses. These STB and Cable platforms for limited access networks offer strong growth opportunities for internally amplified digital media platforms. New scalable and cost reduced Audio Add-In Card solutions from D2Audio will quickly displace previous solutions and allow the market to more rapidly expand to address consumer needs in the living room, the bedroom, and the dormitory. With the new sleek enclosures being developed today, lifestyle applications are perhaps the ones to gain the most. Never before have such capable systems been available, and now with the power of D2Audio® Intelligent Digital Amplifiers™.

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