



Electronics: Today and Beyond

-- 10/10/2005

<http://www.designnews.com/article/CA6262939.html?section=supplement>

There really are only two types of electronic products: those that we see and touch every day and those that we do not. Visible electronic products include desktop PCs, HDTVs, cell phones, and, in fact, anything portable. The unseen electronic products, also known as embedded applications, include control systems in everything from vehicles to factories and other behind-the-scenes electronics applications such as servers and telecommunications infrastructure. These products drive the advancement of components from connectors to passives and the most sophisticated digital and analog integrated circuits (ICs). Today's portable products cram so much into a small space that every aspect must be miniaturized. At the same time, every component that can draw power from the battery must be optimized for minimum current draw.

The semiconductor industry provides a more comprehensive breakdown to understand the mix of electronic products. Data presented at the Semico Summit 2005 by Wilf Corrigan, Chairman and CEO of LSI Logic, shows that consumer electronics accounts for 18.5 percent of the \$214 billion of global semiconductor sales in 2004 and is the fastest growing market. According to Corrigan, consumer applications of semiconductors exceeded corporate usage for the first time in 2004.

The products driving this growth are the usual suspects: digital audio, digital TV, high definition disk, and DVD recorders. On the embedded side, forecasts predict worldwide disk storage capacity to quadruple in 2008 from the 2004 level to over 5,000 petabytes (1 petabyte = 1,000 terabytes; 1 terabyte = 1,000 gigabytes). And, storage is just one aspect of embedded. To make these semiconductors function in end products, a host of other components is required.

Driving Forces Dictate Trends

At the highest level, the one thing that is impacting electronics and end users in the 21st century is networking—connecting anything electronic to a network for remote monitoring and control. The next level is connecting to the network and wireless will obviously be the most interesting approach but data over power lines is an attractive alternative in some cases. The enablers of networking are digital computing everywhere, more and different types of sensing technologies, increasing amounts of software, and cheaper memory that all lead to "smart everything."

The increasing system design complexity demands components that simplify the overall design process and help engineers get their product to market faster. Equally important are advanced test and measurement systems to verify that these sophisticated products meet the design targets. However, there are a number of other requirements that provide driving forces for end products, subsystems, and components:

Reliability and durability are foremost considerations for many electronic products, especially if they operate in harsh environments.

Cost competition is fierce in the global electronics market. This drives suppliers to provide similar yet different designs so their customers can differentiate the end product.

Meeting standards and government regulations requires additional effort. Essentially every component except software must comply with legislation on the Restriction of Hazardous Substances (RoHS).

In the supply chain, value-added distributors that help with the design-in phase have expanded their capabilities well beyond providing the logistics for obtaining components. This addresses another global trend of companies outsourcing all but core competencies.

The "hot" new products will be those that satisfy the consumers' driving forces, which include improved safety/security, efficiency, comfort and convenience, and entertainment, while meeting any legislated requirements, such as reduced emissions.

The trends that will influence electronics and electronics designers the most are those that drive consumers to spend money on an HDTV, PDA, camera cell phone, and other "gotta have" products. Equally important are the not so obvious electronic products that satisfy the needs of industrial and commercial buyers to reduce manufacturing costs and create the infrastructure to make those "gotta have" products.

WEB RESOURCES

//Check out the links below for more info//

Semico Research:

<http://rbi.ims.ca/4416-722> RoHS:

<http://rbi.ims.ca/4416-723>

© 2005, Reed Business Information, a division of Reed Elsevier Inc. All Rights Reserved.