Feature AMD's innovative Direct Connect Architecture for leading-edge performance by providing separate, dedicated high-speed links between processor and memory, processor and I/O, and I/O to memory to enable predictability in real-time applications.

HyperTransport™ technology helps boost overall system performance through a dedicated high-speed, low-latency I/O interface.

AMD Digital Media Xpress™ technology designed to be compatible with the largest installed base of multimedia-enhanced software, taking 3D and graphics to new levels for medical imaging, gaming, kiosk, and point-of-sale applications.

Product Overview

Shrink the design, not the performance, with the AMD Sempron™ 200U and 210U processors designed specifically for embedded systems. These AMD Sempron processors are specifically designed with unique computing features and a thin, compact form factor to help enable new and uncompromising designs. The AMD Sempron 200U and 210U processors are packaged in a small-footprint, lidless BGA (Ball Grid Array) package. This enables small form factor and rugged designs to be created with optimal thermal dissipation utilizing a soldered down ASB1 device. The AMD Sempron 200U and 210U processors are well suited for designs including enterprise-class thin client systems, point of sale kiosks, digital signage, ruggedized systems for military aero or other field implementations, telecommunications and networking devices, gaming machines and industrial controls with these models supporting extended longevity.

A Complete and Robust Platform

AMD is delivering a complete and robust embedded platform with the combination of the AMD Sempron ASB1 processor family and the AMD M690E chipset featuring integrated graphics capability. This tightly coupled platform can help streamline design and time to market and deliver superior performance. This platform was developed specifically for the embedded market and helps to address the increasing need for superior graphics and multiple display options in traditional embedded systems. The AMD M690E chipset features full DirectX® 9.0 support and is designed to enable multiple display and output options such as dual independent displays with resolution, refresh rates, and display data that can be completely independent for the two display paths. This processor and chipset combination is a total solution that allows for new smaller form factor options, fanless operation, and ruggedized designs with integrated graphics capabilities to help meet today's expected level of computing performance for traditional embedded designs in a broad range of markets.

Additionally, for those solutions that need extreme performance graphics the ATI Radeon™ E2400 discrete GPU can be incorporated into the platform. This leading discrete GPU offers support for Microsoft® DirectX 10.0 and OpenGL 2.0 and like the AMD Sempron 200U and 210U processors, delivers a compact physical size to accommodate shrinking embedded system form factors. The ATI Radeon E2400 GPU also features a BGA package with on-board memory, advanced power management features and the five year product availability typical of AMD Embedded products.

Product Features and Benefits

- Featuring AMD's Innovative Direct Connect Architecture for leading-edge performance by providing separate, dedicated high-speed links between processor and memory, processor and I/O, and I/O to memory to enable predictability in real-time applications
- HyperTransport™ technology helps boost overall system performance through a dedicated high-speed, low-latency I/O interface
- AMD Digital Media Xpress™ technology designed to be compatible with the largest installed base of multimedia-enhanced software, taking 3D and graphics to new levels for medical imaging, gaming, kiosk, and point-of-sale applications
- Simultaneous 32- and 64-bit performance, designed to be compatible with Microsoft Windows Vista®
- Enhanced Virus Protection to increase the reliability of your network-connected applications

*As part of a comprehensive security program, AMD strongly recommends enabling Enhanced Virus Protection (EVP) and using up-to-date third-party anti-virus software.
The AMD64 core provides leading-edge 32-bit performance, seamless 32- to 64-bit migration, and investment protection.

- AMD64 technology features uncompromising 64- and 32-bit performance.
- Vastly expands memory addressability with 40-bit physical addresses, 48-bit virtual addresses.
- Doubles the number of internal registers with eight additional (96 total) 64-bit integer registers and eight additional (96 total) 128-bit SSE/SSE2/SSE3 registers.
- AMD Digital Media Xpress™ technology provides support for SSE, SSE2, SSE3, and MMX™ Instructions.

Integrated DDR2 memory controller

- Designed to help boost performance by directly connecting the processor to the memory, thus significantly reducing memory latency.
- Supports 2nd generation DDR2 memory which was designed to help improve overall memory performance through increased data rates and larger densities.
- Compatible with higher speed DDR2-533, DDR2-667, DDR2-800 but may clock down speeds due to CPU/memory clock ratio.
- 64-bit interface.

Ultra low latency HyperTransport™ technology for high-speed I/O communication

- HyperTransport technology helps increase overall system performance by helping to reduce traditional system bottlenecks, increase I/O bandwidth, and reduce I/O latency to improve overall system performance.
- One 18-bit link supporting up to 800MHz.
- Up to 6.4GB/s peak HyperTransport I/O bandwidth.

Large high-performance on-chip cache

- 64KB Level 1 instruction cache.
- 64KB Level 1 data cache.
- 256KB Level 2 cache.

Block Diagram

www.amd.com/embedded

ABOUT AMD

AMD (NYSE:AMD) designs and produces innovative microprocessors and low-power processor solutions for the computer, communications, and consumer electronics industries. AMD is dedicated to delivering standards-based, customer-focused solutions for technology users, ranging from enterprises and governments to individual consumers.

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