Enhancing Communication Infrastructure’s Security, Reliability, Scalability and Flexibility with Embedded x86 and ARM® Solutions

AMD Communications Infrastructure customers span a broad range of applications and industries, including data centers, wireless and wire-line network providers, network security operations, unified communications and more. Regardless of industry, customers usually require systems that:

> Deliver security, efficiency and speed.
> Support scalability and an upgrade path.
> Enable space savings in data centers.
> Maintain or reduce system power consumption.
> Maximize performance per watt per dollar.

AMD offers a variety of solutions to meet these needs as well as application-specific requirements.

> AMD Embedded processors combine computational and parallel processing performance in a small form factor solution. For cloud-based and other collaborative applications, A/V conferencing, enterprise security, data center switches and more, AMD’s embedded x86-based solutions offer low power consumption and high performance-per-watt.
> AMD Embedded R-Series Accelerated Processing Units (APUs) are designed to meet the needs of customers with powerful graphics and computational requirements.
> The AMD Embedded G-Series Family of processors – including APUs and Systems-on-Chip (SOCs) – are especially suited for low-power, low-cost, low-maintenance communications and infrastructure applications.

Ubiquitous internet, pervasive content, social networking and mobile technologies are driving explosive data growth. By some recent estimates, internet data is doubling every three to four years. This is driving the transformation and on-going convergence of traditionally diverse Web, Enterprise, Telecom and Mobile businesses. End-to-end (network as well as server) virtualization, cloud computing and software-defined networking (SDN) are some of the technologies addressing this transformation and they provide both opportunities and challenges as they help more people than ever connect for business and personal collaborative endeavors. AMD offers a winning Communication Infrastructure solutions roadmap, which includes offerings in embedded x86 and ARM® processors as well as powerful graphics processors to help customers address this transformation.

Enhancing Communication Infrastructure’s Security, Reliability, Scalability, and Flexibility

With ever-expanding communications needs, communication pipelines require real-time, end-to-end, multi-mode and multi-channel connectivity. Providers must supply secure and reliable links, while also being scalable and flexible enough to accommodate emerging standards, services and upgrades. Demands like these challenge system providers to improve raw performance while maintaining the same cost and power budgets. AMD addresses these demands in a variety of ways:

> High-Performance Solutions – The control and management layer in communications is becoming increasingly complex. Businesses need the ability to handle different protocols and transactions. High-performance processors from AMD can help meet that need.
> **Hardware and Software Stability** – Many networking and security applications are software optimized for x86-based platforms; AMD’s x86 platforms help enable service providers to easily adopt virtualization to share resources efficiently while maintaining only a single application.

> **Support for Open Standards** – AMD provides extensive support for open standards, including OpenCL™, OpenGL and Heterogeneous System Architecture (HSA). AMD supports the OpenCL and OpenGL Application Programming Interfaces (APIs) within its hardware, and provides tools for graphics and computational programming that work with Windows® Embedded, Linux®, and Thread X. The Heterogeneous System Architecture (HSA) is easy to use and inexpensive for developers, and enables excellent performance and power efficiency in a variety of uses.

> **Faster Time-to-Market** – x86-based networking and communication platforms can offer minimal development costs with quick time-to-market. x86 designers can leverage a large ecosystem of design tools, debuggers, reference and off-the-shelf platforms and chassis.

> **Fully Integrated Graphics** – As graphics processors become more powerful and more general purpose, their uses are expanding. Combining graphics processors with CPUs – utilizing OpenCL, for instance – provides possibilities in applications such as facial recognition, artificial intelligence, spatial recognition and other data center solutions.

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**AMD Communications Infrastructure Solutions**

AMD is pleased to offer powerful x86 and discrete graphics solutions currently, with a roadmap that includes a full complement of x86, ARM and powerful graphics processor solutions, providing a range of flexible offerings for our customers. Whether the end application is a secure networking appliance or a high-end switch or router, AMD offers solutions that address the need for outstanding performance per watt, reliability, scalability and upgrade path.

For board and system-level solutions based on this technology, please visit [http://www.amd.com/embedded/catalog](http://www.amd.com/embedded/catalog) and select Networking and Communications.

For more information on AMD Embedded Solutions, please visit [www.amd.com/embedded](http://www.amd.com/embedded).