



Power and Performance Scalability with the Key Features for Industrial Control and Automation Solutions

With factory-floor and other industrial applications becoming increasingly sophisticated and complex, AMD's embedded solutions for Industrial Control and Automation address the evolving demands of these markets with very low power, scalable, x86 performance-based solutions. AMD Industrial Control and Automation solutions serve diverse applications ranging from headless sensor and control systems to complex display systems with easy-to-use human-machine interfaces (HMIs) and highly integrated controllers.

AMD Industrial Control and Automation Solutions

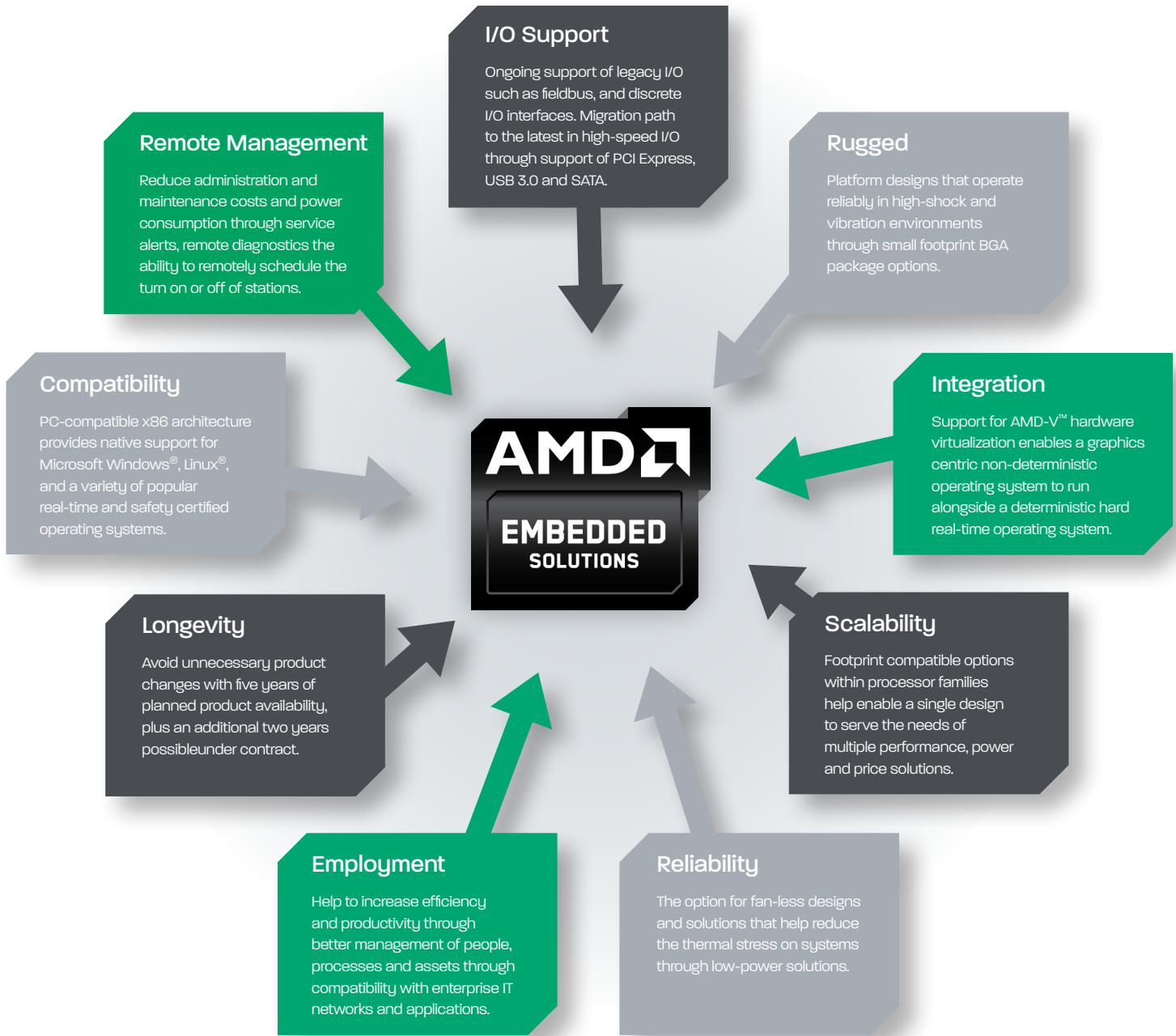
For low power and cost sensitive applications, the processors in the AMD Embedded G-Series family are built around an optimized power efficient core that delivers CPU and graphics performance in a compact ball grid array (BGA) package, providing a good fit for low-power and low-cost designs. For high performance applications that require the integration of functions or high performance, the AMD Embedded R-Series APUs (Accelerated Processing Units) deliver exceptional CPU, graphics and compute performance in a solution that is still power efficient.

While traditional benefits of these APU solutions include **longevity** and **low power consumption**, applications built around the AMD G-Series processors and R-Series APUs also offer **graphics and compute capabilities** not typically found in solutions targeting Industrial Control and Automation.

AMD Embedded APUs feature a variety of attributes for Industrial Control and Automation applications:

- > For small form factor programmable automation controllers and battery powered portable operator panels, AMD G-Series APUs are available with TDP as low as 4.5W and the average power of the AMD G-T16R platform, including the I/O controller hub, is only 3.249 Watts.¹
- > For PC based machine vision smart cameras that require high image processing performance or for multi axis motion controllers that must perform linear algebra on large matrices, AMD G-Series APUs can deliver up to 92 SP GFLOPS² of compute performance in a compact and power efficient solution.
- > For machine vision servers or compact vision systems, the AMD R-Series APUs with between 128 and 384 compute units can deliver a calculated 172 to 563 SP GFLOPS² of performance and helps enable high performance image processing applications to be built that are low power and fit into small form factors.
- > For thin and small form factor operator panels that require the latest consumer-like interfaces and gesture based input, AMD G-Series APU based solutions offer over 9X the graphics performance at 90% of the power of the competitor's platform.³
- > For industrial box PCs, the AMD G-Series APUs offer footprint compatible options to easily scale the system performance, power, cost and features to meet the specific needs of the application.
- > For high performance operator panels, automation panels and industrial box PCs, the AMD R-Series APUs help to facilitate the integration of visualization and multi-axis motion control onto a single platform through a combination of high CPU and graphics performance.

AMD embedded solutions for Industrial Control and Automation help provide the following benefits for OEMs and end-users:



For more information about AMD's embedded solutions for Industrial Control and Automation, please visit <http://www.amd.com/industrial>

1. While running a Winbench 99 business graphics benchmark the AMD G-T16R APU consumed an average of 2.284W. I/O Controller Hub power is estimated based on the measured average power drawn by the I/OCH of .965W during a run of 3DMark 06. System Configuration: AMD G-T16R APU (DVT) at 30°C, "Inagua" Development Board, 4GB 1.35V DDR3, Windows 7 Ultimate. EMB-26
 2. Calculated SP GFLOPs = (# of x86 cores x (128 bit (FPUs) / 32 bit (SP Operation)) * CPU Base Frequency) + (# of shader units * (64 bit (shader) / 32 bit (SP Operation)) * GPU Max Frequency). EMB-21
 3. In AMD internal testing as of October 7, 2010, the Intel Atom D510 scored 161 in 3DMark06 at 1280x1024. AMD G-T40N processor scored 1518 in 3DMark06 at 1280x1024, 9.43 times as high. The TDP for the Intel Atom D510 solution is 15.5W. The TDP for the AMD G-T40N platform is 13.7W, or 88% of the Intel solution's TDP.
 Test configurations: AMD G-T40N APU, "Inagua" development platform, 2 GB RAM, Windows 7. Intel platform: Intel Atom D510, SuperMicro x7SPA-H motherboard, 2GB RAM, Windows 7 Enterprise Edition. EMB-8

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