



AMD Solutions for Printing and Imaging:

AMD Embedded SOCs

AMD Embedded G-Series
optimized for power efficiency

AMD Embedded R-Series
optimized for performance

AMD Discrete Graphics

AMD Embedded Radeon™
for enhanced graphics
and compute

Application Brief: AMD Solutions for Printing and Imaging

Optimal Price/Performance, and Unrivaled Processor Flexibility and Software Scalability for Low Cost, Value-add Printing and Imaging

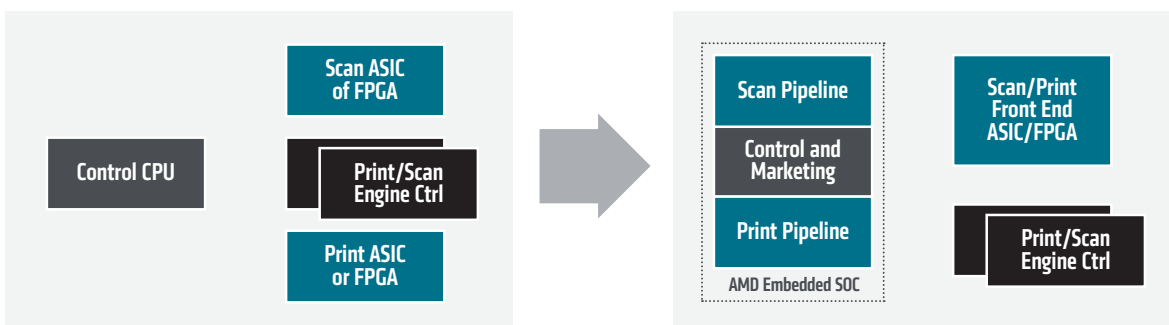
Designers of next-generation printing and imaging solutions seek the freedom and flexibility to enable advanced value-add services while minimizing hardware, software and development expenses. They're increasingly constrained by the cost, coding and maintenance inefficiencies imposed by legacy ASIC, DSP and FPGA processors, and burdened by antiquated system architectures and narrow processor support ecosystems that limit hardware and software scalability.

AMD addresses these challenges head-on with a comprehensive portfolio of x86 processing solutions for printing and imaging systems spanning from midrange multifunction printers to enterprise-class large format and production printers. Providing a wide breadth of performance, power and price options, AMD enables OEMs to provide highly differentiated printing and imaging solutions and services that can help lower their customers' total cost of ownership.

The AMD Advantage

Where previously printing and imaging processing functions were partitioned across heterogeneous chipsets comprised of control CPUs, ASICs and/or DSPs and FPGAs, AMD's Embedded SOCs can unify these functions under a single processor leveraging advanced GPU compute capabilities. In this architecture, the onboard GPU accelerates the computation of image processing algorithms via its massively parallel processing power, while consolidating scan and print pipeline processing and general control processing functions onto a common processing platform.

This approach helps reduce BOM costs and simplifies hardware complexity while boosting processing performance, enabling faster, higher quality scanning and printing, and advanced, revenue-generating value add-services including document management, data analysis and more. What's more, system designers can exploit pin and software stack compatibility across select processors throughout AMD's portfolio to maintain design continuity and streamline development cycles across their printing and imaging product portfolios.



Amplified Programming Efficiency

Printing and imaging system designers can quickly and easily harness the parallel processing power of AMD's GPU compute capabilities leveraging the open standard, cross-platform OpenCL™ and OpenGL® development tools. Providing the ability to develop and maintain unified, portable source code via a proven, non-proprietary programming platform, OpenCL and OpenGL enable developers to

achieve significant programming efficiency gains and preserve the value of their source code for future product generations. Additionally, AMD provides a large library of OpenCL optimized compute functions for printing applications in the form of a vertical development kit (VDK) that will simplify the implementation of the printer software.

Key AMD Benefits:

End-to-End Processing Agility

AMD Embedded SOCs can accelerate algorithm processing across scan pipelines (image correction, image enhancement, image compression and de-compression, storage to memory) and print pipelines (vector image processing and raster image processing).

Power Efficiency

AMD Embedded SOCs are available in a wide range of thermal design profiles (TDPs) starting from 5 watts, and are well suited to meet Energy Star and Lot 26 certification standards.

Security

AMD Embedded SOCs contain an onboard AMD Secure Processor designed to meet stringent regulatory security specifications demanded by printer OEMs.

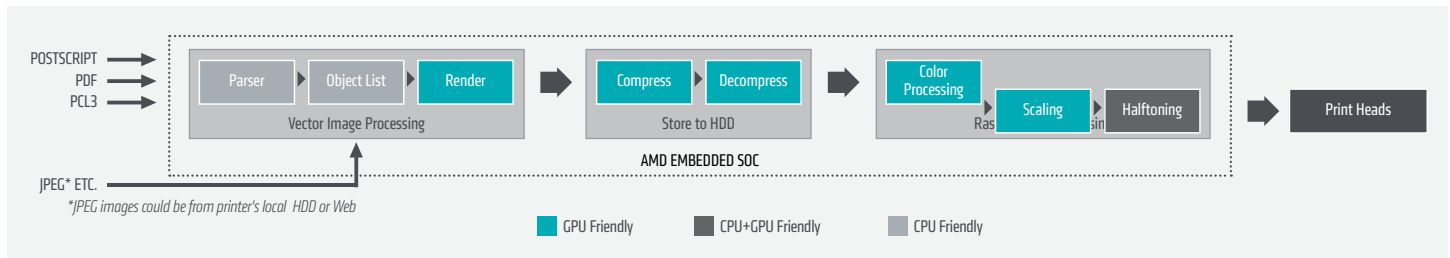
GPU Computing Versatility

The Radeon™ Open eCcosystem (ROCm), based on the GPUOpen initiative, equips designers to achieve breakthrough innovations in GPU-driven imaging and parallel processing capabilities leveraging open development tools and software. CPU and GPU workloads can be balanced for optimal processing performance, reducing latencies and maximizing access to shared memory resources. This feature is currently supported on select AMD Embedded solutions, with additional support in progress.

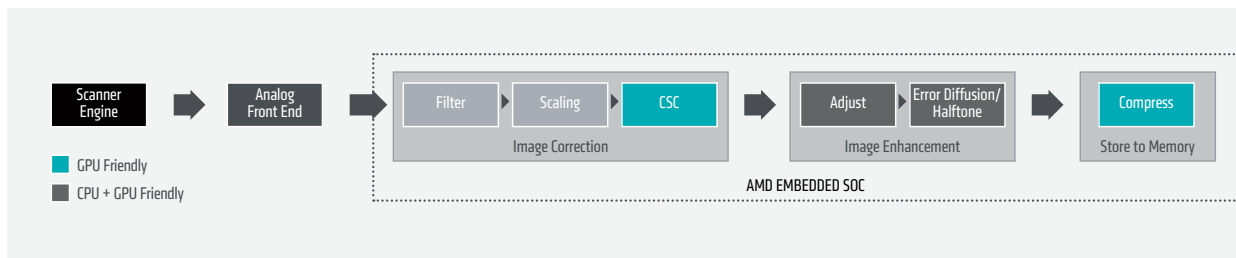
Supply Longevity

AMD's planned processor longevity extends to up to 10 years, providing customers with a long-lifecycle support roadmap.

Print Pipeline



Scan Pipeline



For more information about the specific features and specifications supported by select products in AMD's solution portfolio, or to learn more about AMD's printing and imaging solutions, visit www.amd.com

AMD.com/embedded