AMD Product Brief:

3rd Generation AMD Embedded G-Series SoC I Family

Exceptional Processing Performance with Advanced Multimedia and Display Features

PRODUCT OVERVIEW

AMD Embedded G-Series I Family SOCs deliver the highest processing performance in the G-Series SOC portfolio, and are optimized for demanding graphics and compute applications. Supporting 4K multimedia and multi-display configurations, and featuring dual channel DDR4 memory with error-correction code (ECC), AMD Embedded G-Series I Family SOCs provide high-speed processing performance to meet the needs of next generation embedded system designs.

KEY BENEFITS

- **Scalability** – Pin compatibility with the higher performance, AMD Embedded R-Series SoC allows design continuity and the ability to right size your solution.

- **High Performance Multi-Media** – 4K hardware video decode support ensures that AMD Embedded G-Series I Family SOCs provide exceptional multi-media performance for stunning visual experiences.

- **Multi-Display Configurability** – AMD Embedded G-Series I Family SOCs’ dual display support enables immersive display configurations.

- **Flexible, High Performance Memory** – Dual channel DDR4/DDR3 and ECC support equips AMD Embedded G-Series I Family SOCs to offer high bandwidth memory access and integrity.

- **Breakthrough Integration** – AMD Embedded G-Series I Family SOCs integrate two x86 “Excavator” CPU cores with 1MB of shared L2 cache, up to four Radeon™ R6E GPU compute units, and an I/O controller all integrated on a single die.

- **Power Efficiency** – AMD Embedded G-Series I Family SOCs offer a configurable TDP (cTDP) range spanning from 12W to 15W to fit a range of thermal design profiles (TDPs).

- **Supply Longevity** – Planned longevity for AMD Embedded G-Series I SOCs extends to up to 10 years, providing a long-lifecycle support roadmap.
TARGET APPLICATIONS
AMD Embedded G-Series I Family SOCs are designed to meet the processing requirements of a wide range of embedded applications, including thin client, digital signage, digital gaming, retail POS, industrial/automation, military/aerospace, smart camera, set-top box and networking/communications applications.

KEY FEATURES
- Flexible scalability across AMD FP4 class offerings including package footprint and software compatibility with AMD Embedded R-Series SOCs and AMD Embedded G-Series J Family SOCs
- 2X “Excavator” x86 cores with 1MB shared L2 cache
- AMD Radeon™ R6E graphics (up to 4CUs) with support for DirectX® 12
- Dual channel 64-bit DDR4 or DDR3 memory with error correction code
- 4K x 2K H.265 decode capability and multi format encode and decode
  - UVD v6 Unified Video Decode Engine – H.265, H.264 decode
  - VCE v3.1 Video Compression Engine – H.264 encode
- Support for up to two display interfaces via HDMI® 2.0, DisplayPort 1.2, Embedded DisplayPort 1.4
- Designed to be compliant with the Heterogeneous System Architecture 1.0 Specification
- AMD Secure Processor
- High performance, integrated Controller Hub supports:
  - PCIe® Gen 3 1x4, PCIe Gen2/3 4x1
  - 2 USB3, 2 USB2 ports
  - 2 SATA 2.0/3.0 ports

G-SERIES I FAMILY SOC (BROWN FALCON)

<table>
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<th>Model</th>
<th>OPN</th>
<th># of x86 Cores</th>
<th>Target TDP</th>
<th>Shared L2 Cache</th>
<th>Target CPU Base/Mx Freq</th>
<th>CPU Cores</th>
<th>Target GPU Freq</th>
<th>Target DDR Freq</th>
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Silicon AMD Radeon™ and FirePro™ GPUs based on the Graphics Core Next architecture consist of multiple discrete execution engines known as a Compute Unit (“CU”). Each CU contains 64 shaders (“Stream Processors”) working in unison.