Additional Key Features

64-bit x86 "Zen 2" Architecture

- Up to 64 cores/128 threads
- 512KB L2 cache per core
- Up to 64 MB of total L3 cache

Memory

- 8-channel DDR4 up to 3200 MT/s with ECC support
- Up to two DIMMs per channel
- RDIMM, LRDIMM, 3D2, NVDIMM-NAMD support

Security

- Dedicated Security Subsystem
- Hardware Root-of-Trust
- SME
- SEV
- SEV-ES

Integrated I/O

- 128 lanes (single socket) or up to 162 lanes (dual socket) of PCIe® Gen4
- 32 lanes switchable with SATA or NVME
- Server Controller Hub
  - USB, UART, SPI, LPC, I2C

SOC Thermal Design Power (TDP)

- 85W to 280W

AMD EPYC™ Embedded 7002 Series

Optimized Performance-Per-Watt with "Zen 2" Architecture and Scalable Up to 64 Cores for Ultra Efficient Storage, Networking, Security and Industrial Systems

PRODUCT OVERVIEW

The AMD EPYC™ Embedded 7002 processor series combines groundbreaking 2nd Gen AMD EPYC™ performance up to 64 cores per SoC and "Zen 2" features. It's the first x86 embedded CPU series to market with PCIe® Gen4 support and scalability up to 128 lanes. AMD EPYC™ Embedded 7002 Series processors are targeted for space and power-constrained, 'always on' embedded systems requiring high performance compute and I/O agility in a thermally adept profile.

The AMD EPYC™ Embedded 7002 Series surpasses 1st Gen AMD EPYC™ processors with improved execution pipelines, higher clock rates, and up to 4x the shared Level 3 cache. The result is up to 4x the theoretical peak floating point operations per second[1] (FLOPS) when compared to 1st Gen AMD EPYC™ Embedded processors leveraging the "Zen" architecture.

EXCEPTIONAL PERFORMANCE-PER-WATT BALANCE

The performance and power scalability afforded with AMD EPYC™ Embedded 7002 Series processors make them an ideal fit for embedded system OEMs expanding their product portfolios across a range of performance, power and cost-optimized options. AMD EPYC™ Embedded 7002 Series processors are designed to meet stringent performance and efficiency requirements for next-generation networking, security/firewall, storage and industrial systems.

The series is comprised of nine standard availability models with performance options ranging from 8 to 64 cores, and a thermal design power (TDP) profile ranging from 85W to 280W for optimal performance per watt. The onboard I/O provides ample connectivity for additional ASICs and/or controllers to help enable greater overall design flexibility. AMD EPYC™ Embedded 7002 Series processors are socket compatible with EPYC™ Embedded 7003 Series in SP3 socket infrastructure, and support planned availability up to five years.

UNIQUE EMBEDDED FEATURES

Additional embedded market-focused features available with AMD EPYC™ Embedded 7002 Series processors include NVMe™ Hot Plug, as well as Non-Transparent Bridging (NTB) – running on PCI Express® interface – to help improve system reliability by establishing a communication channel between two redundant CPU units.

Equipped with DDR4 3200 memory support up to eight channels with ECC, AMD EPYC™ Embedded 7002 Series processors support rapid memory transfer speeds to maximize compute agility and prioritize and process workloads efficiently. Each channel has capability to support up to 2 DIMMs to yield 4 TB of main memory capacity per socket.

For advanced security, AMD EPYC™ Embedded 7002 Series processors feature an independent on-board AMD Security Processor, with available capabilities including Secure Encrypted Virtualization (SEV) for securely isolating hypervisors and virtual machines (VMs) in virtualized storage environments, and Secure Memory Encryption (SME) for defending against unauthorized memory access.

AMD EPYC™ Embedded 7002 Series processors integrate a broad set of high-speed interfaces with 128 I/O lanes capable of up to PCIe® Gen4 speeds (up to 162 lanes in 2P configurations), and support for 32 SATA or NVMe devices.

MODEL	PRODUCTION OPN	2P/1P	CORES	DEFAULT TDP (W)	cTDP MIN (W)	L3 $ (MB)	BASE FREQ (GHz)	MAX BOOST FREQ (GHz)
7662	100-000000137E	2P	64	225	225-240	256	2.0	3.3
7742	100-000000053E	2P	64	225	225-240	256	2.25	3.4
7642	100-000000074E	2P	48	225	225-240	256	2.3	3.3
7552	100-000000076E	2P	48	200	165-200	192	2.2	3.3
7542	100-000000075E	2P	32	225	225-240	128	2.9	3.4
7502	100-000000054E	2P	32	180	165-200	128	2.5	3.35
7452	100-000000057E	2P	32	155	155-180	128	2.35	3.35
7402	100-000000046E	2P	24	180	165-200	128	2.8	3.35
7352	100-000000077E	2P	24	155	155-180	128	2.3	3.2
7302	100-000000043E	2P	16	155	155-180	128	3.0	3.3
72822	100-000000078E	2P	16	120	120-150	64	2.8	3.2
72722	100-000000079E	2P	12	120	120-150	64	2.9	3.2
7262	100-000000041E	2P	8	155	155-180	128	3.2	3.4
72522	100-000000080E	2P	8	120	120-150	64	3.1	3.2
7502P	100-000000045E	1P	32	180	165-200	128	2.50	3.35
7292P3	100-000000408E	1P	16	85	85-120	64	2.0	3.2
7232P2	100-000000081E	1P	8	120	120-150	32	3.1	3.2

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