

PRODUCT BRIEF

CME102

COM Express® Type 7 Network-Optimized Module

Powered by Marvell® OCTEON™ 10 CN102 DPU

PART NO. **SOM-A102-M**

Two pin-compatible models — **CME102** PCIe Gen3 · **CME103** PCIe Gen4

8 cores

Arm Neoverse™ N2
(Armv9.0-A)

5 nm

TSMC process
SPECint@ rate 36.5

48 GB

DDR5, up to
5600 MT/s, ECC

4×10G

10GBASE-KR
+ Gigabit Ethernet

33 W

Processor TDP
fanless-capable

Key features

- Server-class DPU core.** 8× Arm Neoverse N2 at 5 nm; 1 MB L2 per core, up to 16 MB shared last-level cache.
- On-chip hardware engines.** Hardware VPP packet engine and inline IPsec/crypto for wire-speed data-plane offload — a natural fit for AsterNOS (SONiC + VPP).
- Carrier-grade networking.** 4× 10GBASE-KR plus Gigabit Ethernet, with MDIO PHY management and NC-SI sideband for BMC.
- Flexible high-speed I/O.** Up to 6 PCIe lanes — Gen3 on CME102, Gen4 on CME103; 4× USB 3.0/2.0 and SATA; onboard eMMC + SPI boot.
- Standards-based & long-lifecycle.** PICMG COM.0 R3.0 Type 7, Basic 125×95 mm — carrier-board reuse and supply continuity for your roadmap.

Mechanical & thermal

- 125 × 95 mm** COM Express Basic; overall height 21 mm (5 mm connector) or 25 mm (8 mm connector), incl. heat spreader.
- 440-pin** board-to-board connector, 0.5 mm pitch (TE); matched heat-sink available; operating 0–60 °C.

Specifications

Core system	
Processor	Marvell OCTEON 10 CN102, 8× Arm Neoverse N2 (Armv9.0-A)
Cache	1 MB L2 / core; up to 16 MB shared LLC
Boot	Onboard eMMC (HS200/400) + SPI NOR flash
Processor TDP	33 W
Memory	
Technology	DDR5, ECC / non-ECC, 1× 262-pin SODIMM
Data rate / max	5600 MT/s · 48 GB
Interfaces	
Ethernet	4× 10GBASE-KR + 1× GbE
PCI Express	Up to 6× PCIe — Gen3 (CME102) / Gen4 (CME103)
USB / SATA	4× USB 3.0/2.0 · 1× SATA
Serial / I²C	2× UART · 2× I²C / SMBus
Other	4× GPI / 4× GPO, WDT, SPI BIOS, NC-SI
Power & environment	
Power input	VCC_12V 11.4–12.6 V, 4 A
Operating temp.	0 °C to 60 °C
Compliance	PICMG COM.0 R3.0 Type 7, Basic

Target applications



Edge routers & SD-WAN



Firewalls & security



5G small cells / vRAN



White-box networking



NFV & data-plane offload



Industrial & edge compute

ORDERING

MODELS

CME102 · CME103

PART NUMBERS

SOM-A102-M · SOM-A103-M

PCIe / CONNECTOR

Gen3 / Gen4 · 5–8 mm

asterfusion.com · sales@asterfusion.com

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COMPETITIVE POSITIONING

CME102 vs. Intel® Xeon® D COM Express modules

How an 8-core Marvell OCTEON™ 10 data plane compares with the Intel Xeon D-1527 (Broadwell) and current Xeon D-1700 “17xx” (Ice Lake-D) modules that dominate COM Express Type 7 today.

	CME102 (CN102)	Intel Xeon D-1527	Intel Xeon D-1700 (17xx)
CPU cores	8× Neoverse N2 (Armv9)	4C / 8T · Broadwell	up to 10C / 20T · Ice Lake
Process node	5 nm	14 nm	10 nm
Processor TDP	33 W · fanless-capable	35 W	up to 67 W
Memory	DDR5-5600, ECC	DDR4-2133	DDR4-2933
Integrated 10G Ethernet	4× 10G-KR + GbE on-die	up to 2× 10GbE	4× 10G-KR
Packet + crypto offload	HW VPP + inline IPsec	AES-NI	Intel QAT
Fanless operation	Yes	Marginal	Typically no



Server-class SPECrate2017_int 36.5 at ≈ 1.5 SPECint / watt. Eight cores in a 33 W fanless envelope deliver roughly half the per-core power of a comparable Xeon D-1700 module — with the packet path already accelerated in silicon for AsterNOS (SONiC + VPP).

Power & density

5 nm Armv9 cores hit server-class throughput inside a 33 W fanless budget — no chassis fans, lower BOM, simpler thermals at the edge.

Integration

On-die 4×10G-KR, hardware VPP and inline IPsec remove a separate NIC and crypto card — the data plane runs in silicon, not on the cores.

Network-native software

Pairs with Asterfusion AsterNOS (SONiC + VPP); the OCTEON 10 VPP engine accelerates the exact data plane you already run.

Intel does not publish SPECrate2017_int for embedded Xeon D SKUs; comparison reflects Marvell, Intel and COM Express module-vendor datasheets. PCIe: CME102 (CN102) up to 6× Gen3; CME103 (CN103) up to 6× Gen4 — matching Xeon D-1700. Representative Xeon D-1700 SKUs: D-1736NT (8C) / D-1746TER (10C), 67 W module TDP.

ORDERING

MODELS

CME102 ·
CME103

PART NUMBERS

S0M-A102-M · S0M-A103-M

PCIe / CONNECTOR

Gen3 / Gen4 · 5–8 mm

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