Asterfusion

Empowering Choice for Network Fusion in Ubiquitous Computing

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	**5** nm	**48** GB	**4** ×10G	**33** W
Arm Neoverse™ N2 (Armv9.0-A)	TSMC process SPECint® rate 36.5	DDR5, up to 5600 MT/s, ECC	10GBASE-KR + Gigabit Ethernet	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 5 PCIe lanes — Gen3 on CME102; 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 5× PCIe — Gen3 (CME102)
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
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	PART NUMBERS	PCIe / SEATING HEIGHT
CME102	SOM-A102-M	Gen3 · 5/8 mm

https://cloudswit.ch · **bd@cloudswit.ch**

Specs per CME102 User's Manual rev 1.1.

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.

Parameters	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 5× Gen3 — **matching Xeon D-1700**. Representative Xeon D-1700 SKUs: D-1736NT (8C) / D-1746TER (10C), 67 W module TDP.*

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