PARRY LABS

DATASHEET

Edge Compute (EC) Micro

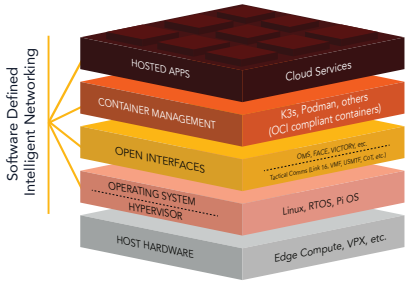
Bringing Small Form Factor Compute Power to the Edge: EC Micro is a heterogenous SWaP optimized hardware solution providing unparalleled compute power, high-density input/output for application hosting of autonomy, intelligent networking, AI/ML and navigation capabilities. EC Micro is a centralized hardware communications hub distributing information, enabling real-time decisions, and expanding network capability. It is scalable as needed with multiple units acting independently or as a cluster.

Micro is a cost-effective SWaP-constrained compute platform that includes:

- High I/O throughput and integrated CSAC for GPS-denied environments
- MOSA compliance
- Onboard CPU (Intel and ARM®) and FPGA processing
- Onboard GPGPU (NVIDIA® Jetson Xavier™ NX) with future support for Orin™ NX
- 2+ TB of secured storage

Available with the Parry Labs Stratia Software Stack that includes:

- FACE and OMS compliance
- Modern Open, Microservice-based Software Architecture with Kubernetes Orchestration
- Airworthiness and Security Accreditation CATO
- Support for military messaging standards (e.g., Link 16, Cursor-on-Target)
- Application Hosting including Third-Party (e.g., APNT, Mission Management, AI/ML, Sensor Processing)



Flexibility

- EC Micro supports one internal M.2 interface to each processor. Contact factory for alternate configurations.
- SMARC form factor supported providing flexibility in processor type and memory capacity.

Configurability

Heterogeneous Processing and Mezzanine I/O	• CPU • GPU • FPGA • M.2
Modify Expansion Board (EXPB)	• Custom I/O from FPGA (replaces Serial, Audio) • Support a MPSoC Design (SDR) • Support a RFSoC Design • Meritec HS D-Sub supports up to 25Gbs pins
Mechanical Top Cover	• Ability to rapidly modify to fit new design

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CPU System on Module (SoM) Specifications

Processor System	CPU	Intel® Atom® X6425RE Series processor, 4-core, 1.9GHz, 1.5MB cache (other options available upon request)
	Memory	16GB DDR4-2133
	Flash	64GB eMMC 5.1
Ethernet	Interface	10/100/1000/ 2.5 Gbit Ethernet (downlink to Switch)
I/O Ports	USB	(2) USB 3.0 Host Ports (2) USB 2.0 Host Ports
	CAN Bus	(1) CAN 2.0 Bus Interface
	Discrete Output	(2) Isolated Discrete Outputs
	GPIO	(16) Software Configurable 3.3V FPGA GPIO
	Serial	(4) Software Programmable Serial UART Ports (RS-232, RS-422, RS-485)
	Audio	(3) Mono Audio Interfaces (Mic/Line In, Line Out, Push-To-Talk (PTT))
Storage	M.2 2280 SSD	(1) 1TB FIPS-140-2 Certified SSD drive (Alternate PCIe M.2 solutions may be supported)
Security	TPM	TPM 2.0
Operating System	Linux	Red Hat Enterprise Linux 9.0

GPGPU System on Module (SoM) Specifications

Processor System	CPU	6-core NVIDIA Carmel ARM®v8.2 64-bit CPU 6MB L2 + 4MB L3
	GPU	384-core NVIDIA Volta™ GPU with 48 Tensor Cores
	Memory	16 GB 128-bit LPDDR4x
	Flash	16 GB eMMC 5.1
Ethernet	Interface	10/100/1000 BASE-T Ethernet (downlink to Switch)
I/O Ports	USB	(1) USB 3.0 Host/Device (1) USB 2.0 Device (internal interface to Atom® CPU)
Storage	M.2 2280 SSD	(1) 1TB FIPS-140-2 Certified SSD drive (Alternate PCIe M.2 solutions may be supported)
Operating System	Linux	Ubuntu 20.04 LTS with JetPack 5.1

Networking

Networking	L2/L3 Switch	(2) Gigabit Ethernet Upstream links (Internal) - (1) Intel Atom® CPU - (1) NVIDIA® Jetson™ NX GPU (2) 10/100/1000Base-T Ethernet Downstream Interfaces (External) (4) 10/100Base-T Ethernet Downstream Interfaces (External)

Timing and Precision

I/O Ports	CSAC	GPS Antenna Port
	CSAC	5V 1PPS Input
	CSAC	5V 1PPS Output
	CSAC	10MHz Sine Wave Output (+13dBm ±3dBm)

SWaP Attributes

Power	Supply Voltage	16-32VDC Input
	Power Consumption	65W Continuous, 80W peak
Mechanical	Dimensions (LxWxH)	5" x 5" x 2.25"
	Weight	2.25lbs
Environmentals	Operational Temperature	-55 to 71 ºC Fanless, Conduction Cooled
	EMI, Shock, Vibe, Power	MIL-STD-461, MIL-STD-810H & MIL-STD-704