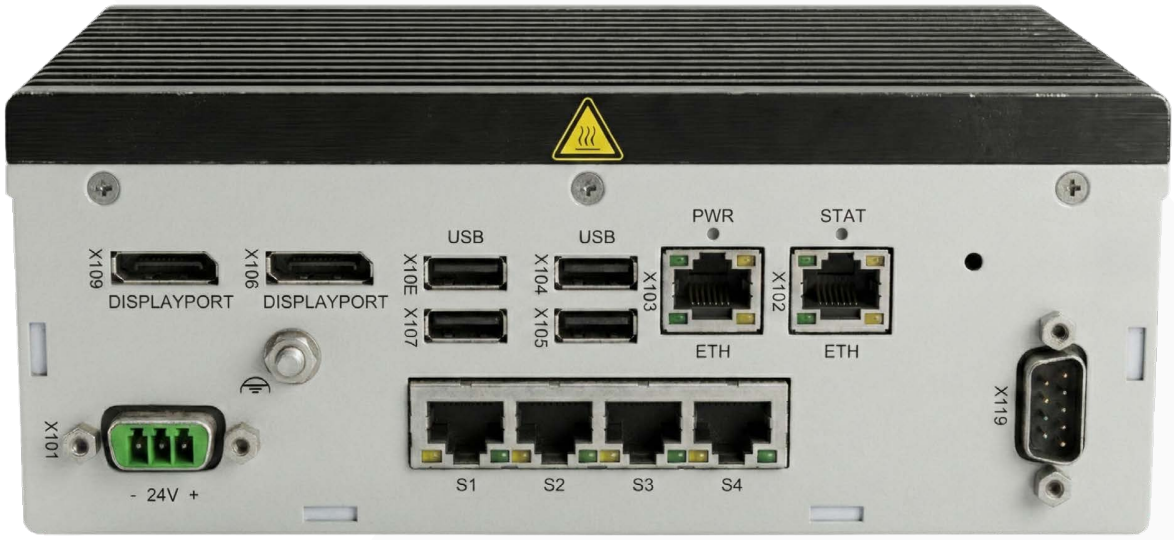
KBox A-151 EAI Series

Industrial Edge AI Platform with Integrated SiMa.ai Acceleration



High-Performance Edge AI Computer for Multimodal Control & Autonomous Systems

- Physical AI Focused: Built for real-time, multimodal interaction with the physical world.
- Integrated SiMa.ai MLSoC™ Modalix: 50+ TOPS of dedicated hardware AI acceleration
- Scalable Architecture: Available with 13th Gen Intel® Core™ (RPL) or Intel Atom® (EKL)
- Secure & Hardened: Fully integrated design with passive cooling for mission-critical reliability and Palette SDK and Edgematic™ Ready: Seamless deployment of complex, multi-sensor ML models for edge inference.

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Solution Highlights

- **High-Performance Multi-Channel Analytics:** Purpose-built to handle intensive multi-camera workloads at the edge. The integrated SiMa.ai MLSoC™ Modalix enables the KBox A-151-EAI to process multiple high-resolution video streams simultaneously with industry-leading frames-per-second (FPS) performance.
- **Dual-Processor Architectural Synergy:** The tight integration between the Intel® x86 host processor and the SiMa.ai MLSoC™ Modalix provides a "Best of Both Worlds" architecture. System integrators can run high-level business logic, legacy control applications, or HMI software on the Intel CPU (Windows/Linux) while the SiMa.ai Modalix operates independently within its own optimized OS. This ensures AI inference performance remains deterministic and isolated from host-level processing spikes.
- **Industry-Leading Power Efficiency:** Delivers up to 10x increase in performance-per-watt compared to traditional GPU-based edge solutions. This allows for high-fidelity AI inference in a fanless, passively cooled chassis without thermal throttling.
- **Effortless "Push-Button" Deployment:** Powered by the SiMa.ai Palette™ SDK software, the platform supports a "deploy in minutes" workflow. It seamlessly integrates with standard frameworks (TensorFlow, PyTorch, ONNX) to accelerate time-to-market for complex ML models.
- **End-to-End Vision Pipeline:** Features dedicated hardware encoders/decoders and an Image Signal Processor (ISP), supporting the entire vision pipeline from sensor ingestion to AI-driven decision making and message streaming.

Technical Information

AI ACCELERATOR	MLSOC AI PERFORMANCE CPU / APU CVU ISP VIDEO MEMORY STORAGE	Modalix™ 50 TOPS (BF16, INT8, INT16) 8-Core ARM Cortex-A65 @ 1.4GHz 4-Core Synopsy ARC EV74 video processor (up to 720 16-bit GOPS) ARM Mali-C71AE (supports 8-24 bit RGB/RGB-IR) Encode 4K@60fps (H.264, H.265, MJPEG); Decode 4K@60fps (H.264, H.265, MJPEG, AV1) 16 GByte LPDDR5 32GB eMMC
PROCESSOR	RPL SERIES EKL SERIES BIOS	**Processor:** Intel® Core™ i7-1365UE / i5-1345UE / i3-1315UE **Graphics:** Intel® Iris® Xe Graphics or Intel® UHD Graphics 7680 x 4320 @ 60Hz **Processor:** Intel Atom® x6425RE / x6211E / Celeron® J6413 **Graphics:** Intel® UHD Graphics 4096 x 2160 @ 60Hz AMI® Aptio V5
MEMORY	RPL EKL	Up to 64 GByte DDR5 (2x SO-DIMM) Up to 32 GByte DDR4 (2x SO-DIMM)
INTERFACES	ETHERNET USB DISPLAY PORT SERIAL LED PWR INPUT	6x RJ45 ports Direct-to-CPU: 2x 2.5GbE Direct-to-Modalix: 4x 1.0 GbE 4x USB **RPL Series:** USB 3.2 Gen 2 **EKL Series:** 2x USB 3.2 + 2x USB 2.0 2x DisplayPort 2x RS232/422/485 (via D-Sub 9) Power On 3-pin Phoenix connector
STORAGE	PROCESSOR TO M.2 SSD	Up to 1TB (128GB, 256GB, 512GB, 1TB) 1x M.2 2280 Key M (PCIe x4 NVMe)
POWER		24 VDC (10 – 30 VDC input range)
SOFTWARE SUPPORT	OS SDK	Debian Linux, KontronOS, Windows 10/11 IoT Enterprise SiMa.ai Palette™ SDK (C++/Python/GStreamer) & LLiMA™ (GenAI Framework)
MECHANICAL	CHASSIS MOUNTING DIMENSIONS WEIGHT	Steel/Aluminum, Fanless design DIN Rail (Wallmount, Bookmount) 7.09" x 2.76" x 4.84" (180 x 70 x 123 mm) Approx 5lbs (2.3kg)
ENVIRONMENTAL	OPERATING TEMP CERTIFICATIONS	0°C to +50°C (Standard), -40°C to +60°C (Extended) CE, UL 61010, FCC, CB, RoHS, REACH

Ordering Information

PART DESCRIPTION	PROCESSOR FAMILY	CPU	MEMORY	STORAGE
KBOX-A151-RPL-I7-EAI	Raptor Lake (High Perf)	Core i7-1365UE	32GB	1TB NVMe
KBOX-A151-RPL-I5-EAI	Raptor Lake (High Perf)	Core i5-1345UE	16GB	256GB NVMe
KBOX-A151-RPL-I3-EAI	Raptor Lake (Mainstream)	Core i3-1315UE	8GB	128GB NVMe
KBOX-A151-EKL-X6-EAI	Elkhart Lake (Efficient)	Atom x6425RE	8GB	128GB NVMe
KBOX-A151-EKL-J6-EAI	Elkhart Lake (Efficient)	Celeron J6413	4GB	128GB NVMe

Accessories

AC/DC ADAPTER	ER40-100012-01	AC-Adapter external 90W / 24VDC
POWER CORD	840-0059 540-0115 840-0405	Power cord EU Power cord UK Power cord US
POWER CONNECTOR	Ee04-100001-01	Phoenix connector 3pol, incl. Housing, without PSU

Your Contact

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