



Pathfinder® P1600 Embedded System on Module

PRODUCT BRIEF

Accelerate embedded edge AI inference applications with higher system-level efficiency and lower power vs. CPU, GPU and FPGA solutions

The Blaize® Pathfinder® P1600 commercial and industrial embedded System on Module (SoM) brings the program-mability and efficiency benefits of the Blaize GSP® architecture to embedded systems. The Blaize P1600 is a small form factor SOM ideal for rugged and challenging environments and embedded systems that need extended temperature range. The P1600 accelerator is based on the Blaize Graph Streaming Processor (GSP®) architecture that enables new levels of processing power with energy efficiency ideal for AI inferencing workloads at the edge. The module is designed to easily plug in to a custom carrier board and run autonomously or integrated within a larger system.

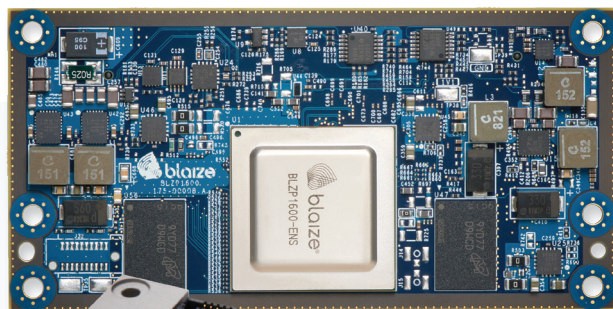
With low power, low latency, and more efficient use of memory, the P1600 SOM is ideal for embedded systems where low power, low latency and performance are key. The P1600 SOM can be used for computer vision applications and new AI inferencing solutions across a range of edge smart vision use cases, like autonomous optical inspection, robotics, worker safety and more.

Programmability to Build Complete AI Apps, Keep Pace with Rapid Evolution of AI Models

The Blaize P1600 SOM, is a software defined AI inference accelerator, making it easy to update and maintain after it is deployed. The Blaize P1600 GSP architecture is designed to run efficiently in a streaming fashion, and it is fully programmable via the Blaize® Picasso® SDK and AI Studio. The hardware and software are purpose-built to enable developers to build entire edge AI inference applications optimized for deployment, and consistent updates by end users.

Edge and Enterprise Servers & Applications

- Autonomous Optical Inspection
- Retail Camera Systems
- Smart Parking & Traffic Management
- Robotics
- Warehouse, Factory & Worker Safety
- Security Systems
- Embedded PCs

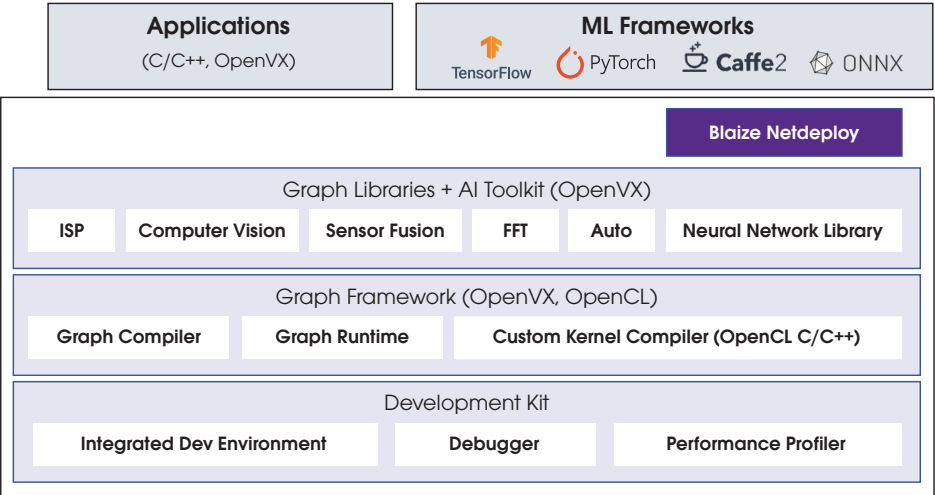


Features

- 1 Blaize 1600 SoC with 16 GSP cores, providing 16 TOPs
- Dual ARM Cortex A53 processors
- MIPI CSI/DSI camera interfaces
- H.264/H.265 encoder and decode
- Soft ISP available to run on Blaize 1600 SoC
- Commercial and industrial grade
- 4 GB LPDDR4
- PCIe Gen 3.0, 4 lanes

Blaize® Picasso® Software
Development Kit Accelerates AI
Development Cycle

- Extensive support for Machine Learning frameworks and modern neural networks
- NetDeploy toolkit to automatically quantize, compress and optimize neural networks for resource-constrained environments
- Extensive libraries to build end-to-end AI applications, integrate soft ISP, Tracker, Sensor Fusion and FFT
- Standard Languages: OpenVX extended, OpenCL C/C++ kernels to build custom layers



Specifications

Features	Description	P1600
GSP	1 Industrial Blaize GSP 1600 SoCs, Data formats INT8, INT16, BF16, FP16, FP32, FP64	16 TOPs
Blaize 1600 SoC	Dual ARM Cortex A53, H.264/H.265 encode and decode, MIPI CSI/DSI camera interfaces, PCIe Gen 3.0 Standard IO: USB, SPI, I2C, I2S, CAN	●
ISP	Programmable GSP accelerated Soft ISP	●
Memory	Blaize 1600 SoC memory	4GB LPDDR4
Power	Typical / Max	10W / 17W
Storage	64 MB Quad SPI NOR Flash	1MB
Interface	400 pin board to board connector	●
Temperature Range	Commercial temperature	0°C to +70°C
	Industrial temperature	-40°C to +85°C
Thermal	Thermal transfer plate and temperature sensing and fan control	Passive
Compliance	RoHS, WEE, CE, FCC	●
Size	Module size including connector and thermal transfer plate	100mm x 50mm x 12mm



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