Blox data sheet

A modular approach to hardware

About AI Blox

AI-Blox wants to make edge technology easy. We believe edge technology can democratise the use of AI. But edge intelligence requires specific hardware and we experienced that a lot of new edge AI applications suffer on the hardware elements, resulting in suboptimal hardware solutions. Also knowing that the tooling landscape is still immature, and encountering a knowledge gap between software-hardware, we noticed a loss of time & energy in the teams we worked with.
We know hardware can be hard, but we believe this should not be the case and therefore we provide modular hardware blocks to accelerate your edge AI application rollout. Our clients typically reduce 50% of the time spent on hardware selection, configuration & setup & maintenance. Our strategy is to take away friction points in the AI value chain and bridge the (knowledge/expertise) gap between hardware & software. That is the client focus that determines our roadmap

Description

Blox is a modular industrial embedded AI computer built around the NVIDIA Jetson family. The device has an anodized aluminium enclosure which functions as a heatsink. It's available with an integrated 7" touchscreen. The modular setup is created by 2 extension slots, one dedicated for communication and one for interfacing. We have various standard communication & interface modules available to support a broad range of use cases. The modular design is unique in the market (as well as the looks). With a single form factor we can make endless variants and tailor-make a platform according to clients needs. That makes our platform highly scalable and suited for use cases across all industries.

Interface Modules

We use a configurable interface slot to add different kinds of external I/O depending on the application needs. Currently the following interface modules are available or planned to be released in the near future:
- Dev kit module
- Up to 6 MIPI cameras
- Up to 4 3.0 USB entries
- Up to 4 Ethernet camera's
- Lidar (Servo drivers (Q3)

Communication Modules

Standard following communication options are currently supported:
- 4G LTE cat 4 with integrated GNSS module
- WiFi
- Gigabit Ethernet
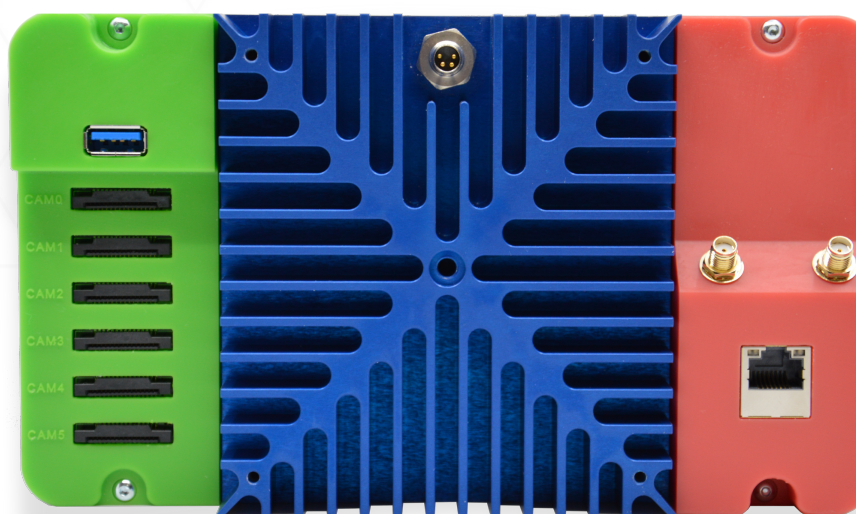- Wifi + Gigabit Ethernet

Display

Blox is available with an integrated 7" LCD touchscreen. This allows the user to interact directly with the device without the need for an external display. In case no display is required, the Blox platform will be delivered with a mounting bracket.

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An industrial design to serve in all conditions

Interface module

Communication module

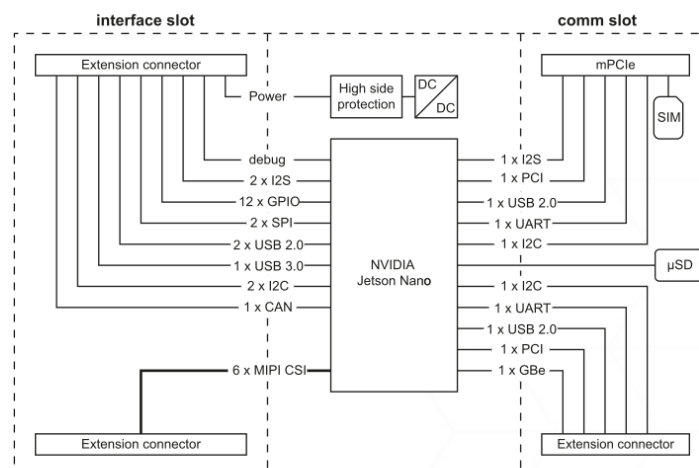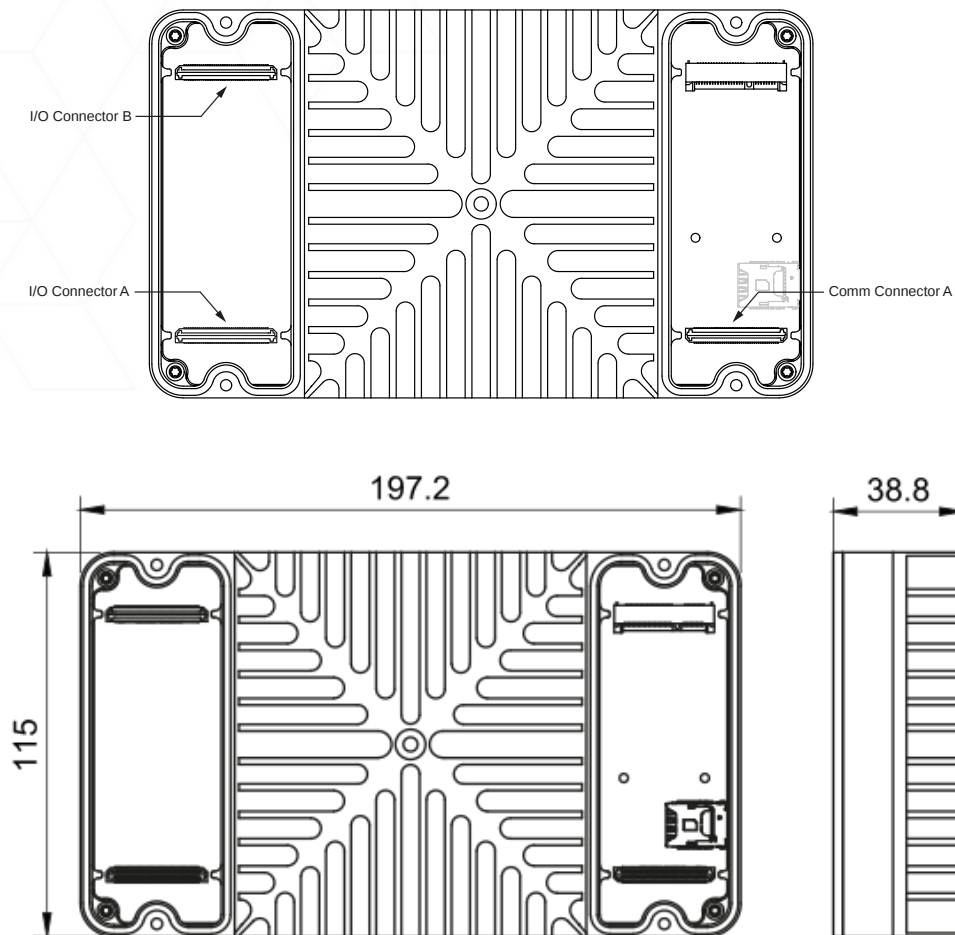| Industrial design |
|---|
| Passive cooled |
| Width input voltage - 10 VDC - 48 VDC |
| Width operating temperature : -25˚C - +60˚C |
| Up to IP67 Protection Class |
| Compact: 115mm x 39mm x 197 mm |

Headless

7" touchscreen

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Look what's inside

I/O Connector B

I/O Connector A

Comm Connector A

197.2

115

38.8

interface slot

comm slot

Extension connector

mPCIe

Power

High side
protection

DC
DC

SIM

debug
2 x I2S
12 x GPIO
2 x SPI
2 x USB 2.0
1 x USB 3.0
2 x I2C
1 x CAN

NVIDIA
Jetson Nano

1 x I2S
1 x PCI
1 x USB 2.0
1 x UART
1 x I2C

1 x I2C
1 x UART
1 x USB 2.0
1 x PCI
1 x GBe

µSD

6 x MIPI CSI

Extension connector

Extension connector

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Technical Specifications

Technical data	MX1010	MX1020	MX1030
GPU Module	Jetson Nano	Jetson TX2 NX	Jetson Xavier NX
AI performance	0.5 TFLOPS	1.33 TFLOPS	21 TFLOPS
GPU	128-core Nvidia Cuda GPU	256-core Nvidia Pascal GPU	384-core NVIDIA Volta GPU with 48 Tensor Core
CPU	Quad-core ARM Cortex-A57 MPCore Processor	Dual core Denver 2 64-bit + Quad-core ARM Cortex-57 MP - Core	6-core NVIDIA Camel ARMv8.2 64-bit 6MB L2 + 4MB L3
Memory	4GB 64-bit LPDDR4 25.6 GB/s	4GB 128-bit LPDDR4 51.2 GB/s	8GB 128-bit LPDDR4 51.2 GB/s
Storage	16GB eMMC 5.1	16 GB eMMC 5.1	16 GB eMMC 5.1
Display	Optional: 7" with integrated capacitive touch screen		
Power Supply	12 V DC - 24 V DC		
Dimensions	Headless: 115 mm x 41mm x 227,2 mm With 7" display: 115 mm x 38,8 mm x 197,2 mm		
Weight	700g		
Operation temperature	-25°C ... +60°C		
Storage temperature	-40°C ... +80°C		
Protection Class	Max IP67, depends on interface blox		
Approvals / Marking	CE		
Vibration / Shock Resistence	conforms to EN 60068-2-6/EN 60068-2-27		
EMC immunity / emission	conforms to EN 60068-2-6/EN 60068-2-27		

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