

MX10x0 | Module X edge AI platform

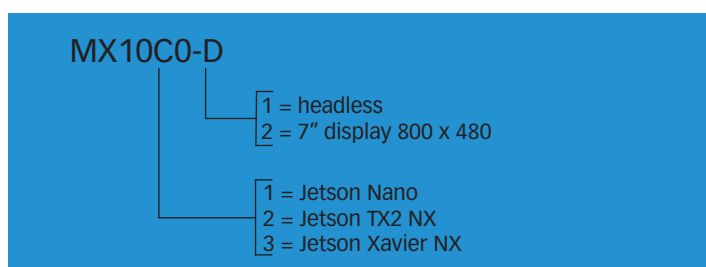
The Module X edge AI platform of AI-BLOX helps you accelerate your edge AI application development. It's an ideal platform for companies who are building AI applications which need to run on the edge. By choosing our platform, you can skip the development of your own hardware platform which can be a very tough and hard process.

All of the Module X devices are built around the NVIDIA Jetson family. The Jetson family is the world leading embedded intelligence platform available on the market and is supported by a large community of developers. Our platform supports all 3 Jetson modules: Jetson Nano, Jetson TX2 NX and the most powerful Jetson Xavier NX. You can switch between these 3 modules without the need of a hardware redesign. In this way you can easily optimise your processor power versus total product cost.

All our Module X devices have 2 extension slots. One extension slot is used to extend the communication capabilities of the device. The other extension slot is used to extend the interface capabilities. AI-BLOX is offering standard modules for those slots. In the future, AI-BLOX will keep releasing new extension modules for different kinds of applications. In the case that a module doesn't suit your needs, we can easily develop a customized module for your needs.

Ordering identifier

The order identifier is derived as follows:



Order code	Description
MX1010-1	Model X edge AI platform, Jetson Nano, headless
MX1010-2	Model X edge AI platform, Jetson Nano, 7" touch display
MX1020-1	Model X edge AI platform, Jetson TX2 NX, headless
MX1020-2	Model X edge AI platform, Jetson TX2 NX, 7" touch display
MX1030-1	Model X edge AI platform, Jetson Xavier NX, headless
MX1030-2	Model X edge AI platform, Jetson Xacier NX, 7" touch display

Description

The MX10x0 device is an industrial embedded AI computer built around the NVIDIA Jetson family. The device has an anodized aluminium enclosure which functions as a heatsink. This makes the device passive cooled and therefore doesn't need a fan. The device can operate in an environment temperature between -25°C and +60°C.

The MX10x0 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. The display itself is IP67 rated. Depending on the communication and I/O modules, a fully IP67 device can be achieved. Please check the datasheet of the extension module to see if the module itself is IP67 rated. In case you don't need a display, the MX10x0 device will be delivered with a mounting bracket. This setup is also IP67 rated.

To extend the functionality of the MX10x0 device, the module has 2 extension slots. One extension slot is a dedicated communication slot and can be used to add different kinds of communication options to the module. Standard following communication options are supported:

- 4G LTE cat 4, with integrated GNSS module
- WiFi
- Bluetooth
- Gigabit ethernet

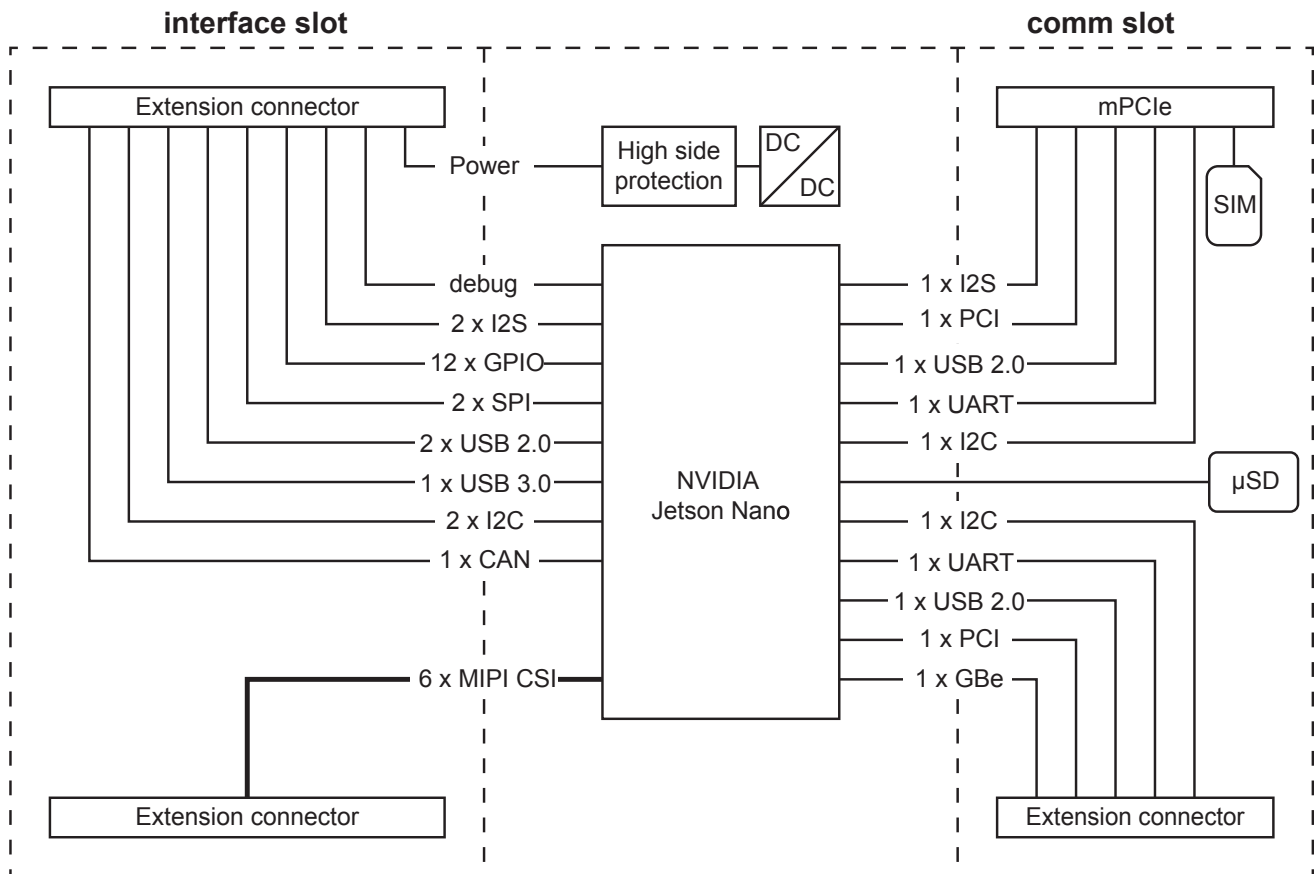
Extra communication options could be added through the use of the mPCIe and M.2 connector. Please contact AI-BLOX for receiving more information and compatibility check in case you want to use your own module.

The second extension slot is the interface slot. This slot can be used to add different kinds of external I/O depending on the application needs. Currently the following interface modules are available or planned to released in the near future:

- Dev kit module
- 1 channel Gigabit Multimedia Serial Link (GSML) module
- 3 channel Gigabit Multimedia Serial Link (GSML) module

In case your application needs a specific module, you could develop your own module. All the design files are freely available on our website. If you don't have the resources to design your own module, please contact AI-BLOX. AI-BLOX is always available to help you in customizing the product for your application.

Blockdiagram



Specifications

Technical data	MX1010	MX1020	MX1030
GPU module	Nano	TX2 NX	Xavier NX
AI performance	0.5 TFLOPS	1.33 TFLOPS	21 TOPS
GPU	128-core NVIDIA CUDA GPU	256-core NVIDIA PASCAL GPU	384-core NVIDIA VOLTA GPU with 48 Tensor Cores
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 51.2GB/s	8GB 128-bit LPDDR4 51.2GB/s
Storage	16 GB eMMC 5.1	16 GB eMMC 5.1	16 GB eMMC 5.1
Display	Optional: 7" LCD with integrated capacitive touch		
Power Supply	12 V DC ... 24 V DC		
Dimensions (WxHxD)	MX90x0-0 : 115 mm x 41 mm x 227,2 mm MX90x0-1 : 115 mm x 38,8 mm x 197,2 mm		
Weight	TBD		
Operation temp.	-25°C...+60°C		
Storage temp.	-40°C...+85°C		
Protection class	max. IP67, depends of I/O and comm modules		
Approvals/markings	CE		
Vibration/shock resistance	conforms to EN 60068-2-6/EN 60068-2-27		
EMC immunity/emission	conforms to EN 61000-6-2/EN 61000-6-4		