

# Enhancing data anywhere, anytime

As data is no longer only generated, processed and stored in the traditional data center or even in the cloud, IT infrastructure is shifting from a centralized to a decentralized model. Today's data is streaming in from a variety of sources and locations in and outside of corporate datacenters. An increasingly powerful processing and machine learning inference capabilities are required at the Edge of the networks to enable next generation, transformative AI and IoT applications. Compute capacities need to evolve fast to follow business growth wherever and whenever needed. BullSequana Edge nano has been designed to meet these challenges in extreme conditions, delivering plug and play powerful AI inference and streaming analytics capabilities, while ensuring that all data remains safe and secure.

## Delivers datacenter compute and management services at the edge

BullSequana Edge nano tackles the most challenging AI workloads as it is ideal for ruggedized compute-intensive embedded AI predictive analytics and computer vision applications at the edge. This plug-and-play server runs Atos own-IP AI solution and the best-in-class partner solutions to deliver data insights in real time with the highest accuracy. The server contains Nvidia Volta GPU. This enables the inference of complex AI models right at the edge with lowest possible latency. Together with its powerful ARM processor, BullSequana Edge provides an outstanding compute power-pack for the implementation of up 128-bit LPDDR4x DRAM and 8 GB storage.

## Designed for extreme conditions

The edge infrastructure must fit into the business environment constraints whether it is an isolated location with poor network, for road-side deployment, on manufacturing production lines, somewhere it requires supporting vibrations, excessive temperatures and might be in installed dusty sheds. Its passive cooling system automatically managed its temperature, which enables to deploy it anywhere without a datacenter infrastructure. It is one of the most silent servers on the market, which makes it perfectly appropriate and hardly detectable in public areas (retail shops, hospitals, sidewalk etc...). Compact, rugged, and highly modular, BullSequana Edge nano matches the demands of your business.



## End-to-end offering & managed services

Atos offers a full range of remote services to help you deploy, configure, support, secure and manage your edge infrastructure in any inhospitable location. The risk of physical intrusion increases substantially in decentralized infrastructure, managing spread devices can be harsh. The firmware of BullSequana Edge nano can be protected by a secure boot mechanism from manipulation by unauthorized parties. Data at rest on the disk can be protected by disk encryption. As worldwide leader in cybersecurity, Atos provides security expertise and security managed services to prevent any threat to your BullSequana Edge nano fleet.

## Benefits

- Highly modular and can be integrated into a cloud to edge infrastructure including BullSequana X series, BullSequana S series and BullSequana Edge
- Security managed services expertise
- Remote international server & solution deployment, monitoring & managed services
- Performing inference of high volume video streams right at the edge avoids data to be sent into the cloud, which saves CO2 (up to 1kg per hour), energy and saves costs in terms of TCO.

# BullSequana Edge nano hardware specifications

## PROCESSORS

<b>CPU</b>	
<b>Name</b>	ARM V8.2, 3 * dual core
<b>Max frequency</b>	1.9GHz
<b>Type</b>	Nvidia Carmel
<b>GPU</b>	
<b>Name</b>	Nvidia Volta
<b>Capacity</b>	384 CUDA Core, 48 Tensor Cores, Performance up to 21 TOPS (INT8)
<b>Max. operating frequency</b>	1100 MHz

## ARCHITECTURE

<b>Chipset</b>	
<b>Name</b>	NVIDIA Jetson Xavier NX (SOM)

## MEMORY

<b>Min/max</b>	8 GB
<b>Type</b>	128-bit LPDDR4x DRAM

## STORAGE

<b>Base</b>	16G of eMMC
<b>Extension</b>	M.2 SATA, 32GB, 64GB or 128GB Micro SD 64GB

## EMBEDDED I/O PORTS

<b>Network Interface Controller (NIC)</b>	2 x Gigabit Ethernet (10/100/1000 Mbps)
<b>System Management services</b>	
<b>USB ports</b>	External 1 x USB 2.0, 1 x USB 3.0; Internal 1 x USB 2.0, 1 x Micro USB
<b>HDMI</b>	Max. resolution 3840 x 2160 @ 60Hz

## OTHER PORTS

<b>DI/DO</b>	4bit in, 4bit out
<b>COM</b>	1 x RS-232/RS-422/RS-485

## POWER SUPPLY

<b>Power adaptor</b>	19-24V (1.5A-1.18A)
<b>Power Type</b>	Terminal block 2 Pin

## I/O CONTINUED

<b>Connectivity</b>	1 x MiniPCIe 2 port USB expansion, or 2 port PoE expansion External router for WIFI, LTE
<b>Mounting options</b>	Stand alone DIN rail kit (optional)
<b>Dimensions</b>	147 x 118 x 52mm (5.7 x 4.6 x 2.0") W x D x H

## OPERATIONAL CONDITIONS

<b>Operating temperature</b>	-10 - 60 °C with 0.7 m/s air flow (Max-P ARM mode)
<b>Operating Humidity</b>	95% @ 40 °C (non-condensing)
<b>Vibration</b>	3 Grms @ 5 - 500 Hz, random, 1 hr/axis

## ECOSYSTEM AND CERTIFICATIONS

<b>Software ecosystem certifications</b>	OS Linux Ubuntu 18.04 with JetPack
<b>Certification</b>	CE/FCC/BSMI/CCC RED certification applies to the external WIFI or LTE router

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