

CS5100 Series

AI-optimized computing platform for the tactical edge

The CS5100 is a rugged AI computing platform, combining NVIDIA® Jetson Orin™ AI processing, low power consumption, and military-grade reliability in a compact 19"/2® form factor. Designed for AI-driven applications, it enables real-time analytics, computer vision, and autonomous capabilities at the tactical edge.

Key features

AI processing

Based on the NVIDIA® Jetson Orin™ processor

AI acceleration:

Up to 100 TOPS for edge AI applications.

Small form factor

Optimized for cramped spaces.

Highly customizable

Modular design for use case optimization

Capabilities

The **CS5100** is a rugged edge-computing platform designed for workloads that require intelligent processing close to the source of data. By combining AI acceleration, power-efficient operation, and compact architecture, it enables advanced analytics and real-time decision support in environments where connectivity, space, and power are limited.

The capabilities of the CS5100 series include:

- **Artificial Intelligence (AI):** Accelerates AI inferencing and machine learning at the tactical edge
- **Sensor Data Processing** for collecting, filtering, and analyzing information from multiple data sources.
- **Adaptive Performance Profiles** balancing AI processing capability and power consumption to match mission requirements.
- **Compact Integration** suitable for embedded systems, vehicles, shelters, and space-constrained platforms

Form factors

The CS5100 series offers different form factors depending on best fit for a particular use case.

19"/2 Half Rack	Customized form factor	Ultra small form factor
		
- Efficiency optimized performance - Standard or customized configurations - Form, fit & function over generations - Isolated power	- Efficiency optimized performance - Project driven offering and form factor - Isolated power	- Low power platforms - Project driven offering and form factor - Design for battery input power or similar

MilDef 19"/2 modular design

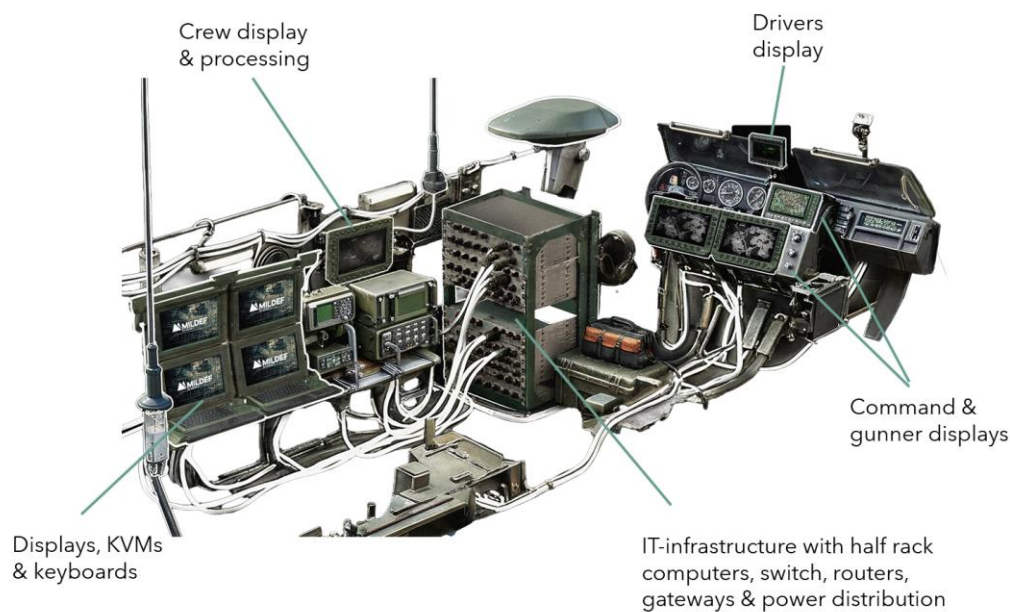
The MilDef 19"/2® addresses the requirements for small, high-performance IT hardware. The modular design and broad product offering (computer, network, power and peripherals) enables the use of 19"/2® units as building blocks for creating built to purpose solution. Same form factor over multiple generations enable reuse of cable, mounting solution etc for midlife upgrades along the system life cycle.

Solution provider

MilDef offers solution and integration delivering seamless, end-to-end solutions by integrating hardware and software into complete systems that meet customer requirements. Managing integration projects/programs to ensure alignment with mission objectives/business strategy and technological capabilities.

Hardware ECO-system

Our hardware offer includes all the building blocks for complete IT infrastructure for the tactical edge, such as displays, network products, power products, docking stations, mounting solutions etc.



Use case

The CS5100 series is a core component of many tactical platform designs. Some use case examples are:

- **Smart Sensor Gateway**
Aggregates data from multiple sensors and performs local AI inference before forwarding actionable information to command systems.
- **Tactical Edge AI Computing**
Hosts AI models for object detection, classification, predictive maintenance, anomaly detection and mission analytics directly at the tactical edge.

Specifications

Computing capability			
Computer module	Nvidia Jetson Orin NX 16 GB	GPU	1024-core NVIDIA Ampere architecture GPU with 32 Tensor Cores
AI performance	100 TOPS	Power modes	15 and 25W
Storage	M2 NVME SSD	Communication interfaces	USB, Ethernet
Environmental			
MIL-STD-810			
Shock operating	Functional Shock. 40G/11ms	Noise level	Max noise level of 40 dB SPL 1 m (3.3 ft)
Temp. operating	-25 to 60°C (-13 to 131 °F)*	Salt fog	5 ± 1%
Temp. storage	-40 to 71°C (-40 to 160 °F)*	Temp. shock	55 °C (131 °F) / -40 °C (-40 °F)*
Humidity	Aggravated, 95 ± 4% RH	Vibration	Rotary wing aircraft - helicopter
IP Class	IP65*		Truck/trailer - loose cargo
Low air pressure	Rapid Decompression -		Ground vehicles - ground mobile tracked
	2 438 m/12 192 m (8000 ft / 40000 ft) Operation/Air Carriage - 4 572 m (15,000 ft)		Ground vehicles - ground mobile wheeled
Optional standards			
RTCA/D0160, VG, DEFSTAN, MIL-STD, etc can be included on request.			
EMC			
MIL-STD-461			
EMI/EMS	Ground Army	ESD	EN61000-4-2:2009 Level 3, Table 1 EN55024:1998 Performance criterion B
Optional standards			
RTCA/D0160, VG, DEFSTAN, MIL-STD, etc can be included on request.			
Power			
Vehicle Power	MIL-STD-1275		

*Higher available on request