



FUTURE OF EDGE ANALYTICS

HIGHLIGHTS

Designed for Industrial Sectors



Rich Industrial Connectivity

AI Ready with NVIDIA Jetson



Long- Term Availability

OUR CLIENTS

aselsan

APL JOHNS HOPKINS
APPLIED PHYSICS LABORATORY

K **A** R G O

isbak
Istanbul IT and Smart City Technologies Inc.

MHS
ABOVE + BEYOND

SIDIME

CONTENTS

**INDUSTRIAL
BOX PCs**

**CUSTOM
DESIGN
SERVICES**



**INDUSTRIAL
CARRIER
BOARDS**

**MILITARY
GRADE
RUGGED
COMPUTERS**

USE CASES

INDUSTRIAL CARRIER BOARDS

- ❖ **Designed for NVIDIA Jetson System on Modules (SoM)**
- ❖ **Ready for AI Deployment Projects**
- ❖ **Supercomputer level processor performance for Deep Learning applications**
- ❖ **Rich industrial connectivity options**
- ❖ **Industrial & Reliable Design with extended temperature range**

DSBOARD – NX2

Industrial Carrier Board for NVIDIA Jetson Nano / Xavier NX

- ❖ Supports NVIDIA Jetson Nano and Xavier NX SOMs
- ❖ AI ready for multi-stream deep learning applications
- ❖ Isolated Digital IO (4 Inputs/4 Outputs)
- ❖ Robust power design
- ❖ Durability for 7/24 operation

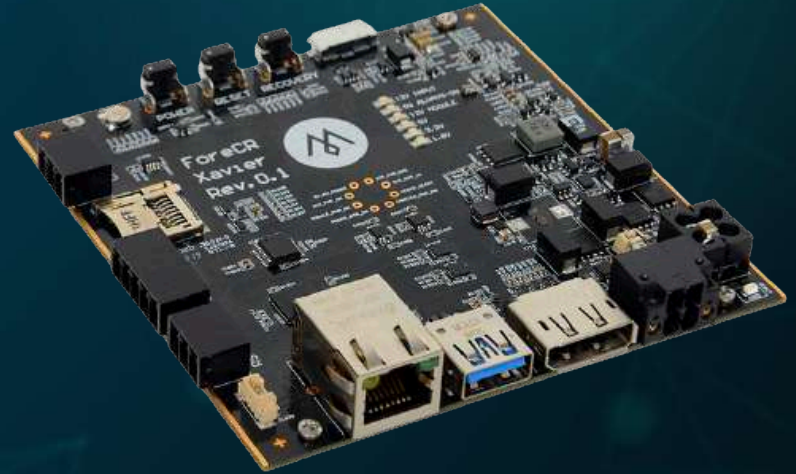


SUPPORTED MODULES	NVIDIA Jetson Nano / NVIDIA Jetson Xavier NX
MEMORY	4 GB 64-bit LPDDR4 / 8 GB 128-bit LPDDR4x
STORAGE	16 GB eMMC 5.1 Flash
DISPLAY	1x HDMI 2.0(max resolution 3840x2160)
CONNECTIVITY	1x Gigabit Ethernet 2x USB 3.1 Type-A 2x microUSB 2.0 (Debug/Recovery)
INDUSTRIAL IO OPTIONS	1x CAN Bus (Only in Xavier NX SoM) 1x RS232/422/485 (software configurable) 2x DIGITAL INPUT / 3x DIGITAL OUTPUT
EXTENSION SOCKETS	1x microSD, 1 x nanoSIM ,1x M.2 Key E (PCIe Gen3 x1) 1x M.2 Key B (USB 3.0) 1x M.2 Key M (PCIe Gen4 x4)
CAMERA INPUTS	2x 2-Lane MIPI-CSI2
WIRELESS COMMUNICATION	WiFi/Bluetooth/LTE Connectivity by extension sockets
POWER INPUT	9 – 28 VDC
DIMENSIONS	100 mm x 100 mm
AMBIENT CONDITIONS	-25°C ... +85°C
OPERATING SYSTEM	Ubuntu Linux 18.04

DSBOARD – XV2

Industrial Carrier Board for NVIDIA Jetson AGX Xavier

- ❖ AI Ready for IIOT and Industry 4.0 applications
- ❖ Cost-effective Edge Analytics Deployment
- ❖ Ideal for size and power constrained systems
- ❖ Fanless and robust design for 7/24 operation
- ❖ Individual configurations and ODM branding



SUPPORTED MODULES	NVIDIA Jetson AGX Xavier
MEMORY	8GB 256-bit LPDDR4x / 32 GB 256-Bit LPDDR4x
STORAGE	32 GB eMMC 5.1 Flash
DISPLAY	1xHDMI 2.0 (max resolution 3840x2160)
CONNECTIVITY	1x Gigabit Ethernet 2x USB 3.1 Type-A 2x microUSB 2.0 (Debug/Recovery)
INDUSTRIAL IO OPTIONS	1x CAN Bus 1x RS232/422/485 (software configurable) 2x DIGITAL INPUT / 3x DIGITAL OUTPUT
EXTENSION SOCKETS	1x microSD, 1x M.2 Key E (PCIe Gen3 x1) 1x M.2 Key M (PCIe Gen4 x4)
CAMERA INPUTS	3x 2-Lane MIPI-CSI2
WIRELESS COMMUNICATION	WiFi/Bluetooth Connectivity by extension sockets
POWER INPUT	18 -32 V DC
DIMENSIONS	100 mm x 100 mm
AMBIENT CONDITIONS	-40°C ... +85°C
OPERATING SYSTEM	Ubuntu Linux 18.04

INDUSTRIAL BOX PCs

- ❖ **Higher Dependability & Precision Standard**
- ❖ **Process Control & Data Acquisition**
- ❖ **Reliability**
- ❖ **Compatibility**
- ❖ **Expansion options**
- ❖ **Long-term supply**
- ❖ **More Robust Controls & Features**

DSBOX- NX2

Industrial Fanless BOX PC with NVIDIA Jetson Xavier

- ❖ AI Ready for IIOT and Industry 4.0 applications
- ❖ Cost-effective Edge Analytics Deployment
- ❖ Ideal for size and power constrained systems
- ❖ Fanless and robust design for 7/24 operation
- ❖ Individual configurations and ODM branding



GPU	NVIDIA Volta GPU with 48 Tensor Cores
CPU	Six-core NVIDIA Carmel ARM® v8.2 64-bit
MEMORY	8 GB 128-bit LPDDR4x
STORAGE	16 GB eMMC 5.1 Flash, 1x M.2 SSD Slot
DISPLAY	1xHDMI 2.0(max resolution 3840x2160)
CONNECTIVITY	1x Gigabit Ethernet 2x USB 3.1 Type-A,
INDUSTRIAL IO	1x CAN Bus 1x RS232/422/485 (software configurable) 2 Digital Input / 3 Digital Output
POWER INPUT	9-28 VDC / 17 W max.
AMBIENT CONDITIONS	-25°C ... +65°C
DIMENSIONS	110 mm x 130 mm x 60 mm
OPERATING SYSTEM	Ubuntu Linux 18.04

DSBOX- N2

Industrial Fanless BOX PC with NVIDIA Jetson Nano

- ❖ AI Ready for IIOT and Industry 4.0 applications
- ❖ Cost-effective Edge Analytics Deployment
- ❖ Industrial IO options (RS232/485)
- ❖ Ideal for size and power constrained systems
- ❖ Fanless and robust design for 7/24 operation
- ❖ Individual configurations and ODM branding



GPU	NVIDIA Maxwell™ GPU with 128 NVIDIA CUDA® Cores
CPU	Quad-core ARM® Cortex®-A57 processor
MEMORY	4 GB 64-bit LPDDR4
STORAGE	16 GB eMMC 5.1 Flash, 1x M.2 SSD Slot
DISPLAY	1xHDMI 2.0(max resolution 3840x2160)
CONNECTIVITY	1x Gigabit Ethernet 2x USB 3.1 Type-A
INDUSTRIAL IO	1x RS232/422/485 (software configurable) 2 Digital Inputs / 3 Digital Outputs
POWER INPUT	9-28 VDC
AMBIENT CONDITIONS	-25°C ... +65°C
DIMENSIONS	110 mm x 130 mm x 60 mm
OPERATING SYSTEM	Ubuntu Linux 18.04

MILITARY GRADE RUGGED COMPUTERS

- ❖ **Higher Dependability & Precision Standard**
- ❖ **Process Control & Data Acquisition**
- ❖ **Reliability**
- ❖ **Compatibility**
- ❖ **Expansion options**
- ❖ **Long-term supply**
- ❖ **More Robust Controls & Features**

MILBOX - XV

- ❖ NVIDIA Jetson AGX Xavier Processor
- ❖ Supercomputer performance in Military PC form
- ❖ AI Ready for deep neural networks (32 TOPS)
- ❖ Ideal for size and power rugged military systems
- ❖ Fanless and robust design for 7/24 operation
- ❖ IP67 compliant Military Circular Connectors



GPU	NVIDIA Volta GPU with 48 Tensor Cores
CPU	Six-core NVIDIA Carmel ARM® v8.2 64-bit
MEMORY	8GB 256-bit LPDDR4x / 32 GB 256-Bit LPDDR4x
STORAGE	16 GB eMMC 5.1 Flash, 1x M.2 SSD Slot
DISPLAY	1xHDMI
CONNECTIVITY	4x Gigabit Ethernet 1x USB 3.1 2x USB 2.0 1x USB 2.0 (Serial Console)
INDUSTRIAL IO	2x CAN Bus 4x RS232, 4x RS422
POWER INPUT	18-32 VDC (28 VDC Nominal) / 60W max.
AMBIENT CONDITIONS	-25°C ... +70°C (-40°C for Industrial Module)
DIMENSIONS	210 mm x 296 mm x 92 mm / 4750 grams
OPERATING SYSTEM	Ubuntu Linux 18.04

CUSTOM DESIGN SERVICES

- ❖ Custom Carrier Board Design
- ❖ Specific Interface Requirements & Budget Constraints
- ❖ Custom System Design
- ❖ Design for Critical Environment (Military, Railway)
- ❖ Delivery with ready-to-use BSP
- ❖ AI Software Development & Optimization Services

CUSTOM CARRIER BOARD DESIGN

- ❖ Carrier board for NVIDIA Jetson Nano,Xavier NX,AGX Xavier
- ❖ Design with High-speed Interfaces(PCIe, 10G, USB 3.2)
- ❖ Experience on Industrial Connectivity (RS232,RS485,CAN)
- ❖ Compatibility with Industrial Standards
- ❖ Minimal or no NRE depending on quantities
- ❖ Reliable and Durable Design



CUSTOM SYSTEM DESIGN

- ❖ System Design for NVIDIA Jetson Nano,Xavier NX,AGX Xavier
- ❖ Design with High-speed Interfaces(PCIe, 10G, USB 3.2)
- ❖ Experience on Industrial Connectivity (RS232,RS485,CAN)
- ❖ Compatibility with Industrial Standards
- ❖ Reliable and Durable Design for Harsh Environments
- ❖ Military Grade & Railway Compatible Design Experience



AI SOFTWARE SERVICES

- ❖ Development of Deep Learning Algorithms
- ❖ GStreamer Video Applications (Encode, Decode, Stream)
- ❖ Experience on Industrial Connectivity (RS232, RS485, CAN)
- ❖ TensorRT Optimization for NVIDIA Jetson Modules
- ❖ Custom Linux Driver Development for NVIDIA Jetson Modules
- ❖ Cloud Integration



USE CASES

- I. 360 Degrees Situational Awareness System
- II. Traffic Density Measurement

360 Degrees Situational Awareness System

MILBOX -XV

- ❖ Designed for Military Land Vehicles
- ❖ Supercomputer level 32 TOPS AGX Xavier Processor
- ❖ Utilizes Daylight & Thermal Cameras with 4 Gigabit Ethernet Ports
- ❖ Image Processing Algorithm
 - ✓ Object Detection
 - ✓ Segmentation
 - ✓ Classification
 - ✓ Image Stitching



Traffic Density Measurement

DSBOX –NX2

- ❖ Gigabit Ethernet Connection with IP Camera
- ❖ Edge Processing
- ❖ DL Based High-Precision Object Detection Algorithm
- ❖ 21 tops NVIDIA Jetson Xavier NX Processor



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**THANKS
FOR
LISTENING !**