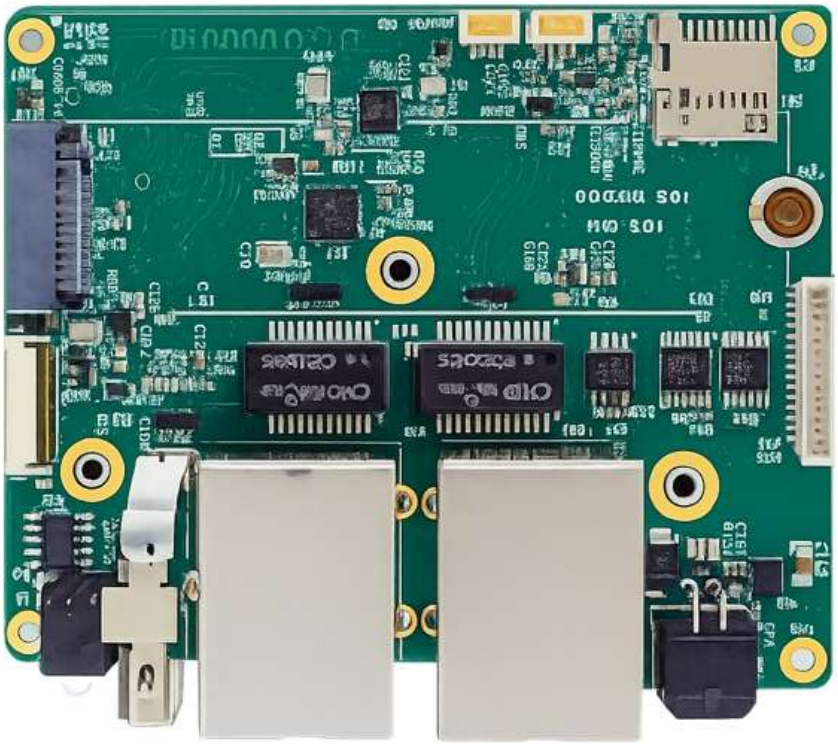
IDS-ONX Carrier Board

Industrial Carrier Board for NVIDIA Jetson Orin NX / Orin Nano

1. Overview

The ONX Carrier Board is a compact industrial-grade platform designed for NVIDIA Jetson Orin NX and Jetson Orin Nano modules. It provides high-speed connectivity, industrial interfaces, and extended temperature support in a 70 × 90 mm form factor.

The board supports standard NVIDIA JetPack firmware installed via SDK Manager. For full hardware interface functionality, installation of the manufacturer’s BSP package is required.



2. Key Features

- Supports Jetson Orin NX and Jetson Orin Nano modules
- 2 × Gigabit Ethernet (RJ45)
- PCIe Gen4 NVMe support (M.2 Key M 2280)
- MIPI CSI camera interface
- Industrial interfaces (CAN, UART, GPIO, I2C, SPI)
- Wide input voltage range: 12–26 VDC (24V nominal)
- Extended operating temperature: –40 °C to +80 °C
- Compact 70 × 90 mm design

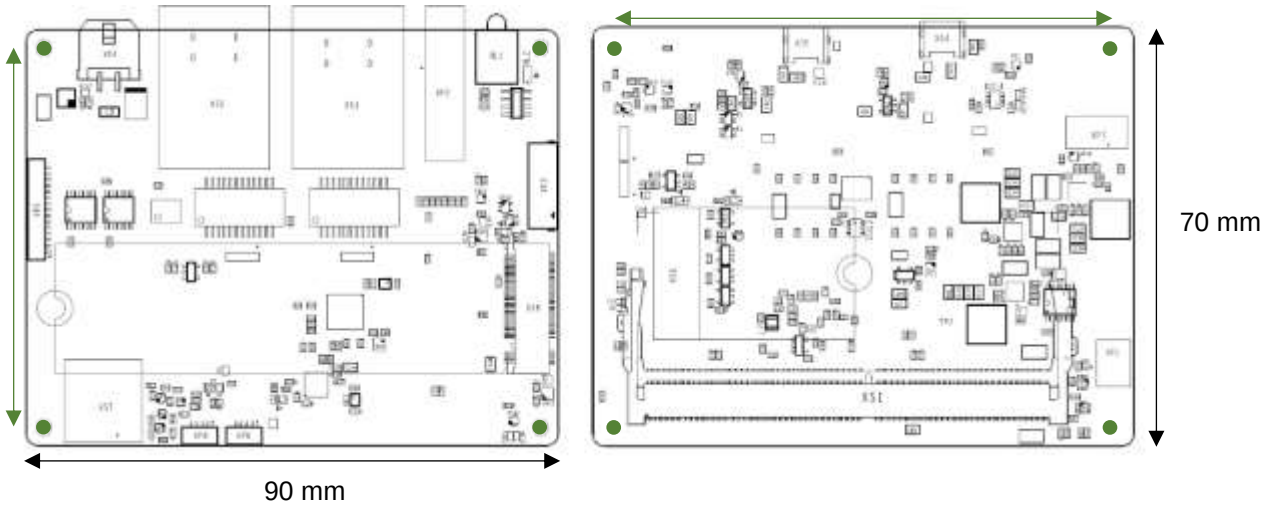
3. Technical Specifications

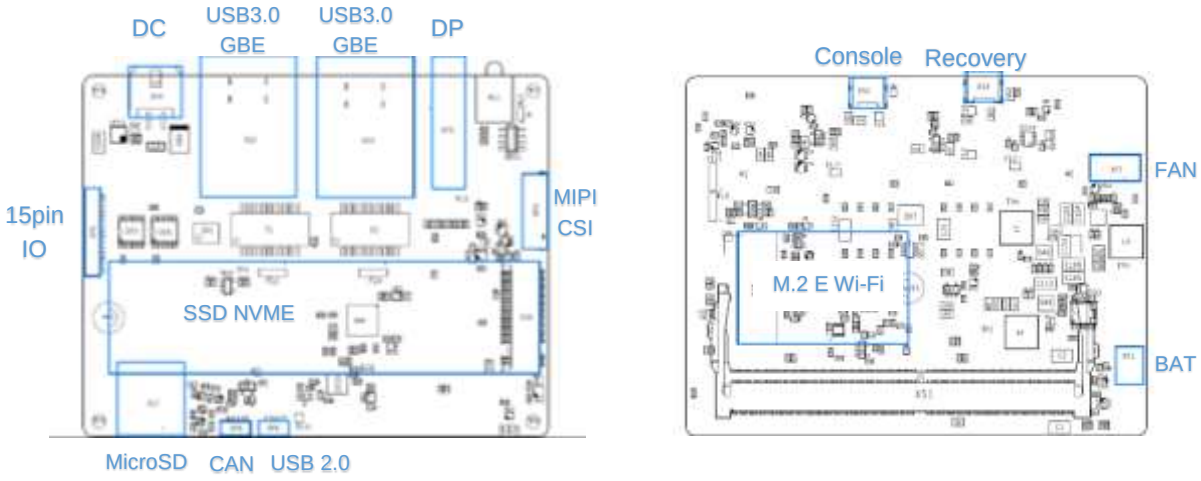
Processor Modules	Nvidia Jetson Orin NX / Jetson Orin Nano
Ethernet	2 × Gigabit RJ45
USB	2× USB 3.0/2.0 Type-A 1× 4-pin USB 2.0 header
Recovery	1× Micro USB (Recovery)
Console	1× Micro USB (Console)
Display	1× DisplayPort (DP out)
Storage	1× M.2 Key M 2280 (PCIe x4 Gen4 NVMe) 1 × microSD
Expansion	1× M.2 Key E (NGFF: PCIe x1, USB)
Camera	MIPI CSI
CAN	1× CAN
15-pin header	1× UART (UART1) 3× GPIO (Pins 11, 12, 13) I2C, SPI
Input Voltage	12–26 VDC (24V nominal)
DC connector type	MOLEX Micro-Fit
Operating Temperature	–40 °C to +80 °C
Dimensions	70 × 90 mm

4. Typical Applications

- Industrial AI systems
- Machine vision
- Robotics and automation
- Edge AI gateways
- Smart transportation systems
- Embedded AI control systems

5. Dimension size and Connector Map





Connector	Type	Description
XS1	SO-DIMM connector	NVIDIA Jetson Orin NX / Orin Nano module interface
XS2	RJ45 & USB3.0	Gigabit Ethernet Port 1 & USB3.0 Type-A
XS3	RJ45 & USB3.0	Gigabit Ethernet Port 2 & USB3.0 Type-A
XS4	Micro USB	Recovery interface
XS5	Micro USB	Debug console
XS6	M.2 Key E	Wireless / expansion module (PCIe x1 + USB)
XS7	MicroSD slot	MicroSD card
XS8	M.2 Key M (2280)	NVMe SSD interface (PCIe x4 Gen4)
XP1	2-pin header	CMOS BATTERY
XP2	DisplayPort	Digital video output
XP3	MIPI CSI	Camera interface
XP4	Power connector	DC input 12–26V, Molex 43045-0402
XP5	15-pin header	I2C / SPI / GPIO / UART expansion
XP6	4-pin header	USB 2.0 interface
XP7	4-pin header	FAN PWM 5V
XP8	4-pin header	CAN interface

Noted: The manufacturer has the right to make adjustments, corrections, and substitutions of components, provided this does not lead to a deterioration in functional characteristics.

6. Ordering Information

Part Number	Description	Notes
IDS-ONX	IDS-ONX Carrier Board for NVIDIA Jetson Orin NX / Orin Nano modules	Industrial carrier board, 70 × 90 mm
Orin-FAN-PWM	Official Cooling Fan for Jetson Orin, Speed-Adjustable	NVIDIA compatible thermal solution from Developer kit
RTS-ORINNX-HS01	Cooling Fan for Jetson Orin	70x40x29 mm, 65g, PWM
RTS-ORINNX-HS01-SUPER	High thermal Cooling Fan for Jetson Orin	80x60x29.9 mm, 164g, PWM
IDS-ONX-BOXPC	Fanless enclosure system for IDS-ONX Carrier Board	Industrial passive cooling enclosure (coming soon)

Jetson Modules

Part Number	Description
900-13767-0040-000 900-13767-0040-001	Jetson Orin Nano 4GB module
900-13767-0030-000 900-13767-0030-001	Jetson Orin Nano 8GB module
900-13767-0010-000 900-13767-0010-001	Jetson Orin NX 8GB module
900-13767-0000-000 900-13767-0000-001	Jetson Orin NX 16GB module

Power and Interface Accessories

Part Number	Description	Notes
IDS-ONX-PSU-19V	Power adapter with DC Jack connector	19V, 2.37A, Molex 0430250400 plug
IDS-ONX-PSU-24V	Industrial power adapter with DC Jack connector	24V, 3.75A, 90W, Molex 0430250400 plug
IDS-ONX-PWR-CBL	Power cable assembly	Molex 0430250400 plug + 0430300012 receptacle → DC Jack
IDS-ONX-IO15-CBL	Cable harness (15-pin connector)	for I2C / SPI / GPIO / UART, 200 mm
IDS-ONX-4PIN-CBL	Cable harness (4-pin connector)	for CAN or USB 2.0, 200 mm