



Main Features

- Built-in NVIDIA® Jetson Orin™ NX 8GB/16GB SoM, up to 157 INT8 Sparse TOPS AI performance in Super Mode
- The rugged, palm size, and fanless/fan kit design
- 4 x GbE PoE+ port for IP CAM/LiDAR sensors
- HEVC/H.265 hardware decode, supports up to 18 x 1080@30fps
- Wide range operating temperature of -25°C~60°C (fan kit, in Super Mode)
- Ultra-speed PCIe 4.0 x4 NVMe SSD for data integrity
- Expandable for GNSS, LTE/5G NR & Wi-Fi 5/6
- DC 9V~36V input with ignition control & OCP/OVP
- NEXCOM Acceleration Linux (NAL) OS w/ JetPack 6.2 integrated
- Military standard of MIL-STD-810H for anti-vibration/shock
- CE/FCC, UKCA, and E-mark certified

Product Overview

AI has become a vital part of autonomous vehicle technologies. Equipped with the high-performance NVIDIA® Jetson Orin™ NX SoM, the ATC 3561-NX4CF delivers up to 157 TOPS of AI inference performance (16GB version in Super Mode), making it ideal for applications such as Advanced Driver Assistance Systems (ADAS) in transportation and construction, Automatic Number Plate Recognition (ANPR), Autonomous Mobile Robots (AMR), Machine Learning (ML), Intelligent Transportation Systems (ITS), railway safety assurance, and factory automation.

Thanks to NEXCOM's advanced thermal design, the ATC 3561-NX4CF can maintain up to 117 TOPS (8GB version) or 157 TOPS (16GB version) even in harsh conditions, enabling consistent real-time AI inference.

The ATC 3561-NX4CF is purpose-built for in-vehicle and railway AI computing. It supports DC 9V to 36V/24V rail power with IGN control, and features four GbE PoE ports for long-distance IP cameras and LiDAR sensors. It also offers a wide range of I/O, including USB 3.2, isolated CAN bus, RS-232, console port, digital I/O (DI/DO), OTG, and HDMI®. With optional 5G NR and Wi-Fi 5/6 modules, the ATC 3561-NX4CF can connect with CPS (Cyber-Physical Systems) for AI model retraining, enhancing inference precision in the field.

Built to endure tough conditions, the ATC 3561-NX4CF supports an operating temperature range of -25°C to 60°C, and complies with MIL-STD-810H for resistance to shock and vibration. It is certified to CE/FCC Class A, UKCA, and E-mark standards.

Specifications

NVIDIA® Jetson Orin™ NX SoM

- Jetson Orin™ NX 8GB
 - CPU: 6-core Arm® Cortex®-A78AE v8.2 64-bit 1.5MB L2 + 4MB L3
 - GPU: 1024-core NVIDIA Ampere architecture with 32 Tensor Cores
 - Memory: 8GB 128-bit LPDDR5 102.4GB/s
 - AI performance: 117 INT8 Sparse TOPS in Super Mode
- Jetson Orin™ NX 16GB
 - CPU: 8-core Arm® Cortex®-A78AE v8.2 64-bit CPU 2MB L2 + 4MB L3
 - GPU: 1024-core NVIDIA Ampere architecture with 32 Tensor Cores
 - Memory: 16GB 128-bit LPDDR5 102GB/s, 3200MHz in frequency
 - AI performance: 157 INT8 Sparse TOPS in Super Mode
- OpenGL 4.6, OpenGL ES 3.2, CUDA® 11.4, and Vulkan 1.1
- 260-pin SO-DIMM form factor compatible with Xavier NX/TX2
- NVIDIA® JetPack 6.2

Storage/Boot Disk

- 1 x M.2 Key M 2242 PCIe 3.0 x4 NVMe SSD, 128GB in default

Expansion

- 1 x M.2 Key E 2230 (PCIe 4.0 + USB 2.0)
- 1 x M.2 Key B 3042/3052 (USB 3.2/2.0) with 2 x nano-SIM slot

Display

- 1 x HDMI® 2.0a/b, up to 3840x2160@60Hz

G-Sensor

- 3D accelerometer and 3D gyroscope, ST LSM6DSLTR

Remote Power Trigger

- ATX power button, wafer reserved

PoE+

- 4 x 1GbE RJ45 port
 - 9K byte Jumbo frame, PTP (IEEE 1588) supported
 - Switching: Realtek RTL8367RBI-VH-CG-I
 - IEEE 802.11af/at PoE (30W power budget)
 - PSE on/off & Watt monitoring

USB

- 2 x USB 3.2, Type-A
 - 5V@900mA each
 - up to 5Gbit/s link speed & compliance with USB 2.0 (LS/FS/HS link speed)
- 1 x OTG Micro-USB (w/ a door)
- 1 x USB 2.0, wafer reserved

DI/DO

- 4-Bit input, non-isolation
 - Source: DC 9V~36V (12V@0.6mA/24V@1.2mA)
 - External: DC 0V~33V pull-high, high-level, DC 3.3V~33V; low-level, DC 0V~2V
- 4-Bit output, non-isolation
 - Source: DC 9V~36V (nominal 35mA@24V)
 - External: DC 5V~27V pull-high, sink current w/ 220mA for each bit, 500mA max (@25C)
- Source or external can be selected by software (default: source type)
- Connector: MULTI-port (DB15)

Serial Port

- 1 x RS-232 (Tx, Rx)
 - RS-232 working voltage $\pm 9V$, baud rate up to 115.2kb/s
 - Connector: MULTI-port (DB15)
- 1 x Console port (Tx, Rx), wafer reserved

