ATC 3562-IP7-NX4MF

NVIDIA® Jetson Orin™ NX Solution
Accelerated Edge AI Computer

Main Features

- Built-in NVIDIA® Jetson Orin™ NX 8GB/16GB SoM, up to 157 TOPS AI performance in Super Mode
- The rugged, fanless/fan kit design with full IP67 rating
- 4-CH GMSL2 & 2 x GbE for camera & LiDAR sensors
- HEVC/H.265 hardware decode, supports up to 11 x 1080p@30Hz
- Wide range operating temperature of -25°C~65°C (w/ fan kit in Super Mode)
- Ultra-speed PCIe 4.0 x4 NVMe SSD for data integrity
- Expansible for GNSS, LTE/5G NR & Wi-Fi 5/6
- DC 9V~36V & 24V rail combined, ignition control and 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, E-mark, EN 50155 & EN 45545-2 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 3562-NX4MF 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 and its full IP67 rating, the ATC 3562-NX4MF 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 3562-NX4MF is purpose-built for in-vehicle and railway AI computing. It supports DC 9V to 36V/24V rail power with IGN control, and features 4-CH GMSL2 interface and GbE PoE functionality for long-distance GMSL2 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 3562-NA4M can connect with CPS (Cyber-Physical Systems) for AI model retraining, enhancing inference precision in the field.

Built to endure tough conditions, the ATC 3562-NX4MF supports an operating temperature range of -25°C to 65°C, and complies with MIL-STD-810H for resistance to shock and vibration. It is certified to CE/FCC Class A, UKCA, EN 50155, EN 45545-2, 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, 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 2280 PCIe 3.0 x4 NVMe SSD, 128GB in default

Expansion Slot

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

Display

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

G-Sensor

- 3D accelerometer and 3D gyroscope, ST LSM6DSLTR

LAN

- 2 x GbE M12 X-coded connector
  - 9Kbyte Jumbo frame, PTP (IEEE 1588) supported
  - Switching: Realtek RTL8367RBI-VH-CG-I
  - PoE+ (30W PSE) in option

MIPI/GMSL2

- 4-CH MIPI SerDes/GMSL2 ports
- Controller: Maxim MAX96712
- PoC (Power over Cable)
- Cable length: up to 15 meters
- Connector: FAKRA Z-coded
- e-con Systems® GMSL2 camera:
  - STURDeCAM21
  - STURDeCAM25
  - STURDeCAM31
- Appro GMSL2 camera:
  - E-09 (IMX415 (4K) + ISPi (YUV) + MAX9295)
  - E-10 (IMX335 (5M) + ISPi (YUV) + MAX9295)
  - E-11 (AR0234 (2.3M) + ISPi (YUV) + MAX9295)
- StereoLabs camera:
  - ZED X (stereo CAM)
  - ZED X One (mono CAM)
- Leopard GMSL2 camera:
  - LI-AR0234CS-GMSL2-OWL
  - LI-AR0234CS-STEREO-GMSL2-30 (stereo CAM)

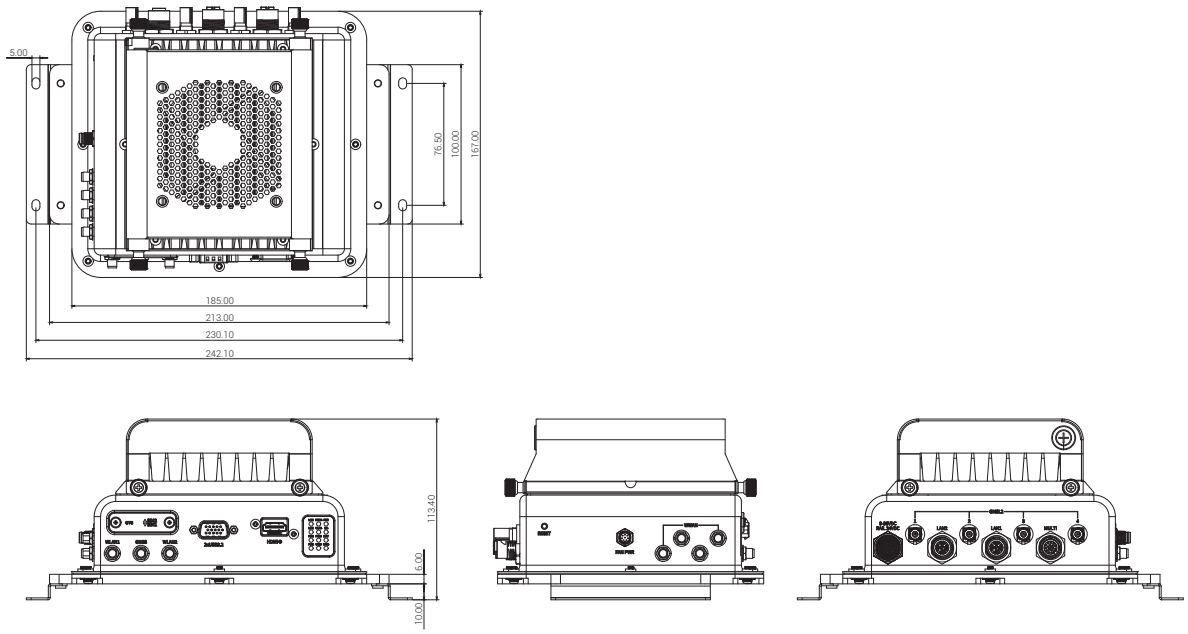
USB

- 2 x USB 3.2 (DB 15, waterproof)
  - 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)

Serial Port

- 1 x RS-232 (Tx, Rx)
  - RS-232 working voltage ± 9V, baud rate up to 115.2kb/s

Dimension Drawing



- Connector: MULTI-port (M12 A-coded)
- 1 x Console (Tx, Rx), wafer reserved

DI/DO (w/ isolation)
- 4-Bit input
  - 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
  - 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 (M12 A-coded)

CAN bus
- 1 x CAN FD, compatible with CAN 2.0A/2.0B
- IEC 61000-4-2 Electrostatic Discharge (ESD): ± 4KV/8KV (contact/air, whole system)
- Up to 5Mb/s in data transmit, 2.5KV isolated
- Connector: MULTI-port (M12 A-coded)

GPS
- u-blox NEO-M9N GNSS module for GPS/GLONASS/QZSS/Galileo/Beidou
- Optional DR (dead reckoning) function, NEO-M9V

Power Management
- Nominal voltage: DC 9V~36V/24V rail
- Cranking voltage: 6V~9V (less than 20 sec)
- OCP & UVP (shut down once exceeding 37V)
- Ignition on/off control & programmable on/off delay timer
- Optional for remote power on/off trigger (wafer reserved)

I/O Interface Front
- 12 x LED indicator
- 1 x Reset button
- 2 x nano-SIM slot, 1 x OTG (w/ a door)
- 1 x HDMI® (waterproof)
- 2 x USB 3.2 (DB15, waterproof)
- 2 x Antenna hole for Wi-Fi 5/6 module (PR-SMA ant.)
- 1 x Antenna hole for GNSS (RP-SMA ant.)

I/O Interface Rear
- 9V~36V rail DC-in, K-coded
- 4 x Fakra Z-code & 2 x GbE M12 X-coded connector
- 1 x MULTI M12 A-coded connector (1 x RS-232 , 1 x CAN, 4DI/4DO)

I/O Interface Side
- 4 x Antenna hole for LTE/5G module (SMA ant.)

Mechanical
- Dimensions: 242.1mm (W) x 167mm (D) x 113.4mm (H) (w/ mount bracket)
- Weight: 2.4kg

Environment
- Operating temperature:
  - -25°C~65°C (fan kit, in Super Mode)
  - -25°C~65°C (fanless, in Normal Mode)
- Storage temperature: -40°C~85°C
- Relative humidity: 10%~95% (non-condensing)

Vibration & Shock
- Vibration in operating
  - MIL-STD-810G, 514.8C, Procedure 6, Category 4
  - IEC 60068-2-64: 2.0g@5Hz~500Hz
  - MIL-STD-810G, 514.6E, Procedure 1, Category 24, 7.7g approx.
- Shock
  - Operating: MIL-STD-810G, Method 516.6, Procedure I, functional shock=20g
  - Non-operating: MIL-STD-810G, Method 516.6, Procedure V, crash hazard shock test=75g

Certifications
- CE/FCC, UKCA, E-mark, EN 50155, and EN 45545-2

Operating System
- NEXCOM Aided Linux (NAL) w/ Jetpack 6.2 integrated
  - NEXCOM custom functions (GNSS, 5G NR, 6-axis sensor, MCU control)
  - V4L2
  - Ubuntu 22.04@Kernel 5.15

Accessories
- External cable:
  - Power cable, 30cm
  - MULTI-port adapter cable, 20cm

Ordering Information

- **ATC 3562-IP7-NX4MF (P/N: 10AT0356202X0)**
  IP67 rating AI edge computer, NVIDIA® Jetson Orin™ NX 8GB, Super Mode, fan kit, 128GB NVMe, 4 x GMSL2, 2 x GbE, 1 x RS-232, 2 x USB 3.2, DC 9V~36V/24V rail

- **ATC 3562-IP7-NX4MF-16 (P/N: 10AT0356203X0)**
  IP67 rating AI edge computer, NVIDIA® Jetson Orin™ NX 16GB, Super Mode, fan kit, 128GB NVMe, 4 x GMSL2, 2 x GbE, 1 x RS-232, 2 x USB 3.2, DC 9V~36V/24V rail