



Main Features

- AIoT edge gateway for ADAS and smart factory applications
- Built-in NVIDIA® Jetson™ TX2 SOM up to 1.3 TFLOPS compute
- The compact, rugged and fanless design
- 4-CH MIPI SerDes CAM in synchronization to reach up to 15m/25m distance
- Operate over a wide range temperature -30~70°C
- Two GbE with PoE+ for LiDAR or GigE Vision/IP CAM
- Diverse data secure storage, eMMC, SD and 2.5" SSD
- Built-in GNSS & Wi-Fi module, optional for LTE/5G
- Rich I/O ports: USB 3.0, OTG, COM, DI/DO, CAN and 12V/5VDC, etc.
- 9~36V DC-in with IGN control
- CE/FCC, Emark certified

Product Overview

AI has become an essential component of automated vehicle technologies. With built-in high cost-effective NVIDIA® Jetson™ TX2, the rugged ATC 3200 can perform a deep learning in inference acceleration up to 1.3TFLOPS computing power suitable for in-vehicle/rolling stock applications like ANPR, ADAS, driver facial/behavior recognition even to ITS for smart city. Moreover, it also can be deployed on smart factory to expedite industrial 4.0. ATC 3200 is a compact, fanless box, which is designed with a 9~36V wide-range DC-in with IGN control, diverse I/O functions like GbE/PoE, USB 3.0, isolation CAN, serial COM, DI/DO, 12V/5V DC-OUT, specialized to an AIoT edge gateway to interface with peripheral sensors like radar, ultrasonic, LiDAR, MIPI cameras to complete an ADAS/ADS system.

To be an edge gateway, ATC 3200 can support up to three media storages, 32/16GB eMMC, SD, 2.5" SSD, and WWAN/WLAN/GNSS in expansion. Besides, it can operate in a wide temperature range of -30~70°C and withstand vibration and shock for any tough environments. For certification, ATC 3200 can meet CE/FCC classA regulation, Emark certified and compliant with EN50155.

Specifications

NVIDIA® Jetson™ TX2 Integrated

- Dual-Core NVIDIA® Denver 2 64-bit CPU and quad-core ARM® A57
- 1.3 TFLOPS compute (FP16)
- 256-Core Pascal integrated GPU @1.2GHz
- OpenGL 4.5, OpenGL ES 3.2, and Vulkan 1.0
- DirectX® 12 compliant
- H.264/H.265 HW encode/decode

Memory

- 8GB 128-bit LPDDR4, 1600MHz

Storage

- 32GB eMMC 5.1 storage
- 1 x Accessible SD
- 1 x 2.5" SSD (15mm height) storage

Expansion

- 1 x Full size mini-PCIe socket (PCIe 2.0 + USB 2.0)
- 1 x M.2 3042/3052 Key B (USB 3.0/2.0) for LTE/ 5G NR module with 2 x external Micro SIM slots

WLAN

- Radio type: IEEE 802.11a/b/g/n/ac dual-band 2 x 2 MIMO
- AP/client mode configurable
- Two antennas

GbE

- 2-Port individual 10/100/1000Mbit/s, RJ45
- Controller: Intel® I210-IT (Jumbo frame & PTP support)

PoE+

- IEEE 802.3af/at compliant

- 2-Port in total 30W power budget
- PoE ON/OFF and power watt monitoring

MIPI CSI-2 (option)

- Up to 4 x individual channel (up to 4K/8MP)
- Thine SerDes solution (V-by-One® HS)
- 1080p60 2Mpixel per channel @15m long reach
- 720p30 1Mpixel per channel @25m long reach
- Integrated with 3rd party MIPI SerDes Camera
 - 1080p CAM: FakraA1A-NV-MC0234-15
 - 720p CAM: A1A-NV-MC0144-15M

USB

- 2 x USB 3.0, type A
 - 5V@900mA each
 - 5Gbit/s link speed & compliance with USB 2.0 (LS/FS/HS link speed)
- 1 x USB 2.0 type-A & 1 x OTG microUSB

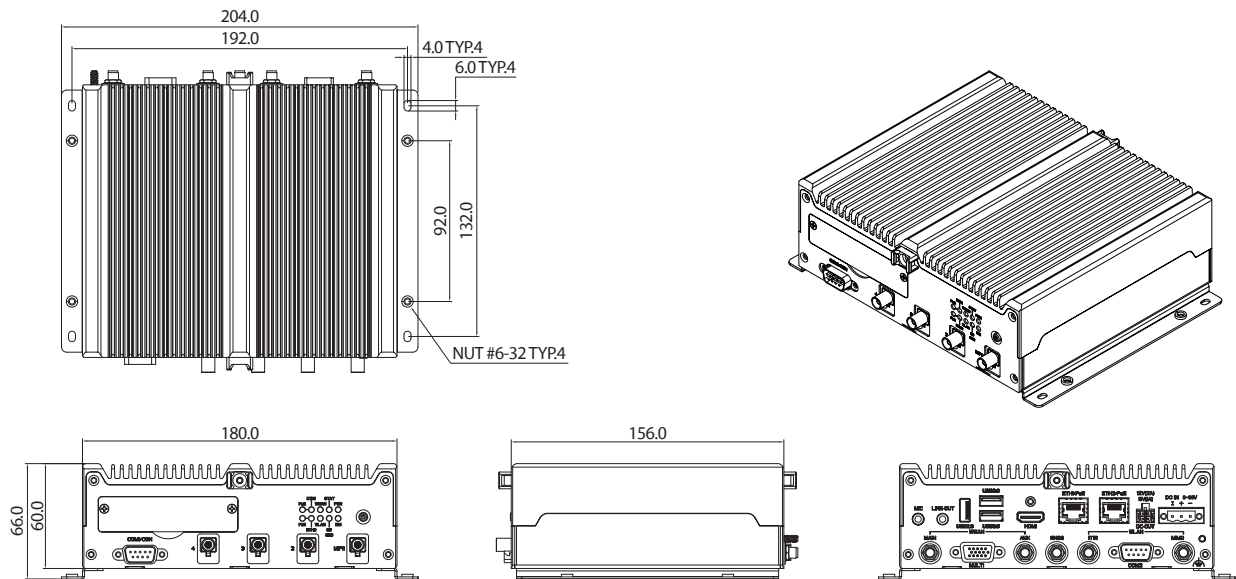
Serial Port

- 2 x RS232/422/485 software selectable & 1 x console port
- RS232: working voltage, +- 9V, baud rate up to 115.2kb/s
- 2-Wire RS482: baud rate: 300~115.2Kbps, data bit: 7/8-bit, stop

DI/DO

- 4-Bit input
 - Source: 9~36VDC (12V@1.1mA/24V@2.2mA)
 - External: 0~33VDC pull-high, high-level, 3.3 - 33VDC; low-level, 0 - 2 VDC
- 4-Bit output
 - Source: 9~36V-in (nominal 17mA@12V, 35mA@24V)
 - External: 5~27VDC pull-high, sink current w/ 220mA for each bit, 500mA max (@25°C)
- Source or external can be selected by software (default: source type)

Dimension Drawing



CAN Bus

- 2 x CAN 2.0A/2.0B from TX2 SOM
- IEC 61000-4-2 Electrostatic Discharge (ESD): $\pm 8\text{KV}/15\text{KV}$ (contact/air)
- 2.5KV isolated

DC-Out

- 12VDC/2A & 5VDC/1A, mini-fit connector

Audio

- Line-out (unbalance stereo, left & right channel) & Mic-in

Display

- 1 x HDMI v1.4, up to 4096 x 2304@24Hz

GPS and Sensor

- U-blox NEO-M8N GNSS module for GPS/Glonass/QZSS/Galileo/Beidou
- Dead reckoning available (NEO-M8U/M8L) in option
- Built-in G-sensor

I/O Ports, Front-Plate

- ATX power button
- Reset button
- 10 x LED indicators for PWR/IGN/WLAN/WWAN/Storage/PoE
- 1 x OTG
- 1 x SD socket
- 2 x Micro SIM slots
- 1 x DB9 (RS232/422/485, console)
- 4 x Z-coded FAKRA for MIPI SerDes CAM (optional)

I/O Ports, Rear-Plate

- 3-Pin terminal block for 9~36VDC-IN
- 2 x USB 3.0 + 1 x USB 2.0, type A
- 1 x HDMI
- 2 x GbE (RJ45), PoE+
- 1 x DB9 (RS232/422/485)
- 1 x DB15 (4 x DI + 4 x DO + 2 x CAN Bus)
- 12V & 5VDC output
- 2 x Audio-jack (left/right Line-out & Mic)
- 5 x SMA for antenna

Dimensions & Weight

- 180 x 156 x 60 (W x D x H, mm)
- 2.4kg

Environment

- Operating temperatures: $-30^{\circ}\text{C}\sim 70^{\circ}\text{C}$ (depends on TX2 throttling control)
- Storage temperatures: $-40^{\circ}\text{C}\sim 85^{\circ}\text{C}$
- Relative humidity: 10%~95% (non-condensing)

Vibration & Shock

- Vibration in operating
 - MIL-STD-810G, 514.6C, Procedure 3, Category 4
 - IEC 60068-2-64: 2.0g@5~500 Hz
 - 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

Regulation

- CE approval, FCC Class A, E13 Certified

Operating System & Software

- Ubuntu Linux x64 version 18.04
- Driver/SDK ready
 - NVIDIA® JetPack 4.4, MIPI SerDes, custom-made SDK
- qv4l2 ready

Options

Ublox-M8U module	CAM1-MT1080-5m
CAM1-MT720-5m/CAM1-MT720-25m	Ublox-M8L module

Ordering Information

- **ATC3200 (P/N: 10AT0320000X0)**
AloT, NVIDIA® Jetson™ TX2 SOM w/ 8GB DDR4, 32GB eMMC, WLAN, 2 x COM, 2 x PoE GbE (RJ45), 2 x USB 3.0
- **ATC3200-4M (P/N: 10AT0320001X0)**
AloT, NVIDIA® Jetson™ TX2 TX2 SOM w/ 8GB DDR4, 32GB eMMC, 2 x COM, 2 x PoE GbE (RJ45), 2 x USB 3.0, 4-ch MIPI SerDes
- **CAM1-MT1080-15m (P/N: 7900000199X00)**
2.3M(G) MiniCam-15mAR0234+ISP+VBO+Enclosure+15M Fakra A1A-NV-MC0234-15M
- **CAM1-MT720-15m (P/N: 7900000202X00)**
1M(G) MiniCam-15mAR0144+ISP+VBO+Enclosure+15M Fakra A1A-NV-MC0144-15M