VTC 7270

Fanless AI Powered Vehicle Computer
with 12/13th Gen Intel® Core™ Processor





Main Features

- Powered by 12/13th Gen Intel® Core™ i processor with DDR5, excellent memory bandwidth, lower latency
- Rich I/Os, 2 x 2.5GbE, 1 x GbE, 6 x USB 3.2, 2 x CAN FD & 4 x Serials, 2 x 2.5" SSD, 1 x NVMe ultra-speed SSD for data integrity
- Up to 2 Hailo AI accelerator (26 TOPS workload each) computing power as optional
- Up to 4 WWAN/WLAN combinations for mobile router applications
- 9V~36V DC-IN with ignition control & OCP/OVP
- Wide range operating temperature of -35°C~70°C (fanless@35W CPU)
- Military standard for anti-vibration/shock
- CE/FCC, UKCA, E mark certified

Product Overview

The VTC 7270 is an AI-powered in-vehicle telematics computer equipped with 12/13th Gen Intel® Core™ processor, offering 30% more computing power than its predecessor. It is a suitable option for various in-vehicle applications to reduce maintenance costs, including fleet management, logistics/AMR, ITS, constructions, ANPR, and security surveillance.

To work as the edge AI, users can install LTE/5G modems, Wi-Fi 5/6 modules, and Hailo AI accelerators (26 TOPS) to deploy AI services collaborating with cloud SaaS. It is a sophisticated AI-aided telematics computer, reliable even in harsh environments.

Specifications

CPU

- 12/13th Gen Intel® Core™ i processor, Intel® R680E chipset
- Graphics:
  - Intel® UHD Graphics 770, 1.55GHz
  - Max resolution: 4096x2160@60Hz (HDMI®)
  - DirectX: 12, OpenGL: 4.5

Memory (optional)

- 2 x DDR5 SO-DIMM, 4800MHz
- ECC & dual-channel support

Storage

- 2 x 2.5" SSD (15mm height, removable)
- 1 x M.2 Key M 2280 (PCIe 4.0 x4), NVMe SSD in default, Hailo AI card (optional)

Expansion Slots

- 1 x Mini PCIe slot (PCIe 3.0, SATA 3.0, USB 2.0), Wi-Fi (default), optional for mSATA
- 1 x Mini PCIe slot (USB 3.2, PCIe 3.0, SATA 3.0), SIMs support, LTE modem (default), optional for Wi-Fi/mSATA by DIP S/W setting
- 1 x M.2 Key B 3042/3050/3052 socket (USB 3.2/2.0), SIMs support for LTE/5G modem
- 1 x M.2 Key E 2230 socket (PCIe 3.0 x2 & USB 2.0), Wi-Fi (default), Hailo AI card in option

Display

- 1 x HDMI® 2.0a/b, up to 3840x2160@60Hz
- 1 x VGA, up to 1920x1200@60Hz; 1 x DP, 4096x2304@60Hz

2.5GbE

- 2-port independent 2.5GbE, RJ45 connector
  - 9Kbyte Jumbo frame
  - PTP (IEEE 1588) support
  - Controller: Intel® I226-IT

GbE/MGT

- 1-port independent GbE, RJ45 connector
  - vPro (iAMT)
  - 9KB Jumbo frame
  - PTP (IEEE 1588) support
  - Wake-up function (WoL)
  - Boot from PXE (Legacy & UEFI)

USB

- 6 x USB 3.2 Gen 2:
  - Host Type-A connector
  - 5V@900mA each
  - Up to 10Gbit/s link speed & compliance with USB 2.0 (LS/FS/HS link speed)

Serial Port

- 2 x Full RS-232/422/485
- 2 x Full RS-232
- RS-232 working voltage, ± 9V, baud rate up to 115.2kb/s
- 2-wire/4-wire RS-485 (Baud rate: 300~115.2Kbps)

Security

- TPM 2.0: Infineon SLB9670VQ2.0 FW7.62

Audio & DC-OUT

- Line out, unbalance stereo, left & right channel
- Line in & MIC in, stereo
- DC-OUT: 12V DC@2A

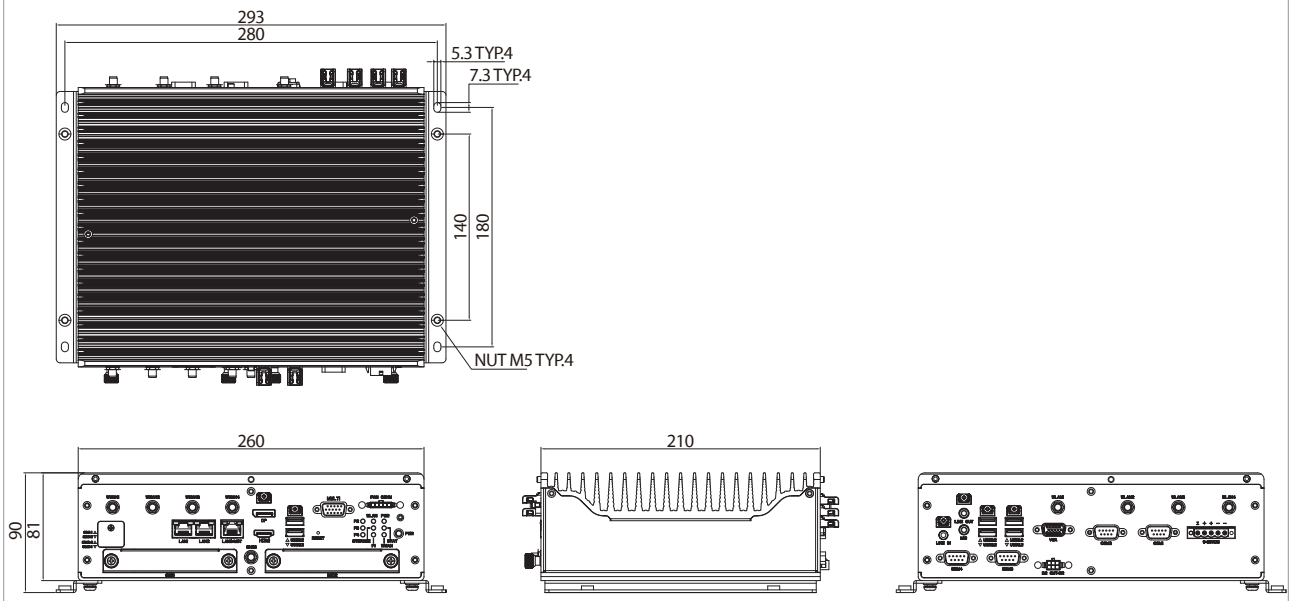
MEMS Sensor

- 3D accelerometer and 3D gyroscope, ST LSM6DSLTR

DI/DO

- 4-bit input
  - Source: 9V~36V DC (12V@1.1mA/24V@2.2mA)
  - External: 0V~33V DC pull-high, high-level, 3.3V~33V DC; low-level, 0V~2V DC

Dimension Drawing



- 4-bit output
  - Source: 9V~36V DC (nominal 35mA@24V)
  - External: 5V~27V DC pull-high, sink current w/ 220mA for each bit, 500mA max (@25C)
- Source or external can be selected by DIP S/W (default: source type)

CAN bus
- 2 x CAN FD, compatible with CAN 2.0A/B
- Up to 5Mb/s in data transmit
- IEC 61000-4-2 Electrostatic Discharge (ESD): ± 4KV/8KV (contact/air)

GNSS
- u-blox NEO-M9N GNSS module for GPS/Gloness/QZSS/Galileo/Beidou
- Optional DR (Dead Reckoning) function, NEO-M9V/M8L

Power Supply
- Nominal voltage: 9V~36V
- Cranking voltage: 6V~9V (less than 20sec)
- OCP & UVP (shut down once exceeding 37V)
- Ignition on/off control & programmable on/off delay timer

I/O Ports, Front-Plate
- ATX power & reset button
- 9 x LED Indicator
- 4 x nano-SIM slot (SIM1-1, SIM1-2, SIM2-1, SIM2-2)
- 2 x USB 3.2 Type-A
- 1 x HDMI®, 1 x DP
- Fan power connector
- 2 x 2.5GbE (RJ45), 1 x GbE (RJ45)
- 2 x Removable 2.5" SSD bay
- 1 x Multi-port DB15 (4 x DI, 4 x DO, 2 x CAN FD)
- 1 x PR-SMA for GNSS, 2/4 x SMA for LTE/5G ant.

I/O Ports, Rear-Plate
- 2 x RS-232 (DB9), 2 x RS-232/422/485 (DB9)
- 4 x USB 3.2 Type-A
- Audio jack for Line in, Line out, MIC in
- 1 x VGA
- 1 x Mini-fit connector (DR signal & DC-OUT)
- 5-pin Phoenix for 9V~36V DC input
- 2/4 x PR-SMA for Wi-Fi ant.

Dimensions & Weight
- 260.0mm x 210.0mm x 81.0mm (w/o mount bracket)
- 293.0mm x 210.0mm x 90.0mm (w/ mount bracket)
- 5.7kg, 6.8kg (w/ fan kit)

Environment
- Operating temperatures: -35°C~70°C (35W CPU, fanless)
- Operating temperatures: -35°C~70°C (65W CPU, w/ fan)
- Storage temperatures: -40°C~85°C
- Relative humidity: 10%~95% (non-condensing)

Vibration & Shock
- Vibration in operating:
  - MIL-STD-810H, 514.8C Procedure 6, Category 4
  - IEC 60068-2-64: 2.0g@5Hz~500Hz
- Vibration in storage:
  - MIL-STD-810H, 514.8E Procedure 1, Category 24, 7.7g
- Shock:
  - MIL-STD-810H, 516.8 Procedure I, trucks and semi-trailers=40g
  - Crash hazard: Procedure V, ground equipment=75g

Certifications
- CE approval, FCC Class A, UKCA, E13 certified

Operating System
- Windows 10 64bit/ Windows 10 IoT 64bit, Windows 11
- Linux (Ubuntu 18.04)

Options

CPU			
Model No.	Core	Max Freq.	TDP
Intel® Core™ i9-12900E/12900TE	16c	5.0/4.8GHz	65W/35W
Intel® Core™ i7-12700E/12700TE	12c	4.8/4.6GHz	65W/35W
Intel® Core™ i5-12500E/12500TE	6c	4.5/4.3GHz	65W/35W
Intel® Core™ i3-12100E/12100TE	4c	4.2/4.0GHz	60W/35W
DDR5 SO-DIMM, 4800MHz			
64GB (in the future)	32GB	16GB	8GB
FAN KIT			
Model No.	Description		P/N
VTK FAN120-01	120mm x 120mm 60W heat dissipate		10VK00FAN00X0

Ordering Information

- **VTC 7270 (P/N: 10V00727000X0)**
  12/13th Gen Intel® Core™ i processor, 2 x 2.5GbE, 1 x GbE,
  6 x USB 3.2,
  4 x Serials, 2 x 2.5" SSD, 2 x CAN FD, 9V~36V DC/IGN