

VTC 7270-C4/C8

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, 4/8 x 2.5GbE PoE+, 1 x GbE, 6 x USB 3.2, 2 x CAN FD & 4 x Serials
- Up to 4 WWAN/WLAN combinations for mobile router applications
- 2 x 2.5" SSD, 1 x NVMe ultra-speed SSD for data integrity
- Up to two Hailo AI accelerator (26 TOPS workload each) as optional
- 9V~36V DC-IN with ignition control & OCP/OVP
- Wide range operating temperature of -35°C~65°C (fanless@35W CPU)
- Military standard for anti-vibration/shock
- CE/FCC, UKCA, E mark certified

Product Overview

The VTC 7270-C4/C8 is an 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 telemetric computer.

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 in default, Hailo card in option

Expansion Slots

- 1 x Mini PCIe slot (PCIe 3.0, SATA 3.0, USB 2.0), Wi-Fi in default, optional for mSATA module
- 1 x Mini PCIe slot (USB 3.2, PCIe 3.0, SATA 3.0), SIMs support, LTE (default), Wi-Fi/mSATA in option 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 3030 socket (PCIe 3.0 x2 & USB 2.0), Wi-Fi (default), Hailo card (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 PoE+

- 4-port independent 2.5GbE, RJ45 connector
 - IEEE 802.3 af/at, total 60W
 - 9Kbyte Jumbo frame
 - PTP (IEEE 1588) support
 - Controller: Intel® I226-IT
- Additional 4-port 2.5GbE PoE, 60W, VTC 7270-C8

GbE/MGT

- 1-port independent GbE, RJ45 connector
 - vPro (iAMT) support (option)
 - 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, $\pm 9V$, 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

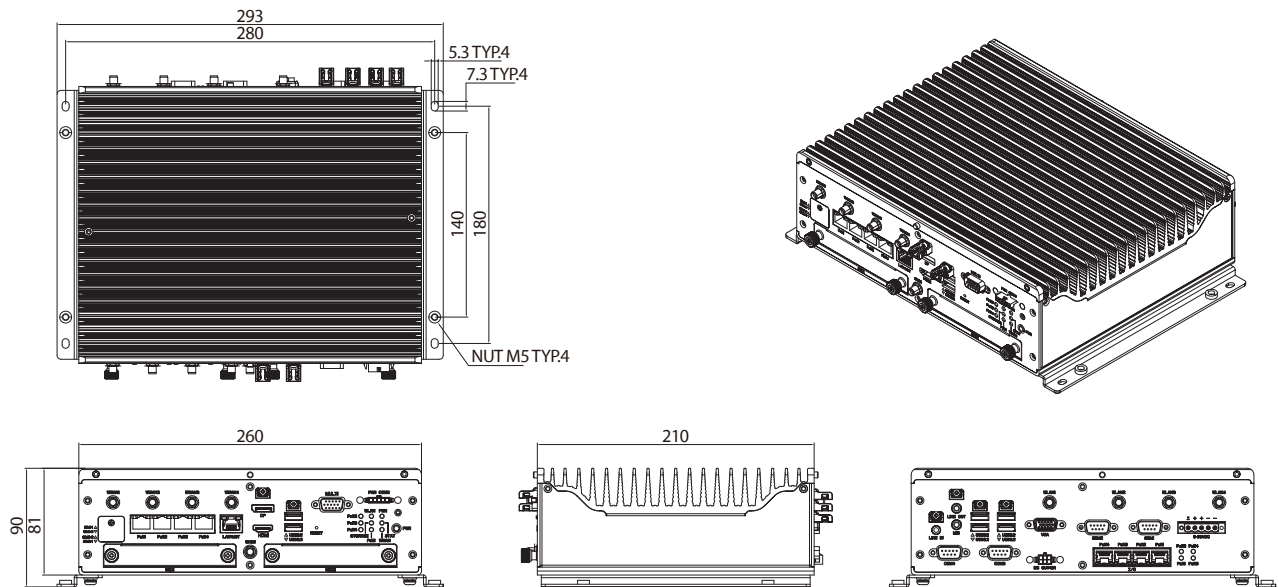
MEMS Sensor

- 3D accelerometer and 3D gyroscope, ST LSM6DSLTR

DI/DO (Isolation)

- 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
- 4-bit output
 - Source: 9V~36V DC (nominal 35mA@24V)

Dimension Drawing



- 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/2.0B
- Up to 5Mb/s in data transmit, 2.5KV isolated
- IEC 61000-4-2 Electrostatic Discharge (ESD): $\pm 4\text{KV}/8\text{KV}$ (contact/air)

GNSS

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

Power Supply

- Nominal voltage: 9V~36V
- Cranking voltage: 6V~9V (less than 20 sec)
- 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
- 4 x 2.5GbE PoE (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
- 5-pin Phoenix for 9V~36V DC input
- 1 x Mini-fit connector (DR signal & DC-OUT)
- 2/4 x PR-SMA for Wi-Fi ant.
- 4 x 2.5GbE PoE (RJ45) with LED Indicators (VTC 7270-C8)

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~60°C/65°C (35W CPU, fanless, 120W/60W PoE)
- Operating temperatures: -35°C~60°C/65°C (65W CPU, w/ fan, 120W/60W PoE)
- 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 64-bit, 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-C4 (P/N: 10V00727001X0)**
12/13th Gen Intel® Core™, 4 x 2.5GbE PoE+, 1 x GbE, 6 x USB 3.2, 4 x Serials, 2 x 2.5"SSD, 2 x CAN FD, 9V~36V DC/IGN
- **VTC 7270-C8 (P/N: 10V00727002X0)**
12/13th Gen Intel® Core™, 8 x 2.5GbE PoE+, 1 x GbE, 6 x USB 3.2, 4 x Serials, 2 x 2.5" SSD, 2 x CAN FD, 9V~36V DC/IGN