

Main Features

- ◆ Powered by Intel® 12th Gen Core-i Alder Lake S
- ◆ Fanless, compact and rugged design
- ◆ Designed with DDR5, excellent memory bandwidth, lower latency
- ◆ Rich I/Os, 4/8 x PoE+, 6 x USB 3.2, 2 x CANBus & 4 x Serials
- ◆ 2 x 2.5" SSD, 1 x NVMe ultra-speed SSD for data integrity
- ◆ Up to 4 extension WWAN/WLAN modules
- ◆ Optional Hailo AI processor with 20TOPS computing power
- ◆ 9~36V DC-IN with ignition control & OCP/OVP
- ◆ Wide range operating temperature of -40°C~65°C
- ◆ Military standard for anti-vibration/shock
- ◆ CE/FCC, UKCA, Emark Certified

Product Overview

VTC 7270-xC4, AI Powered in-vehicle telematics computer, is designed with Intel® 12th Gen Alder Lake S to perform 30% up more computing power than the former generation. Moreover, the 10-year lifespan can satisfy long-term maintenance support and is suitable for any deployments of in-vehicle applications.

With the compact, rugged, and fanless design, VTC 7270-xC4 can be widely installed in a limited space, withstand a harsh environment, and with its high reliability reduce maintenance costs while supporting 24/7 operating services. Besides, the VTC 7270-xC4 features diverse peripherals, such as 2.5GbE, 4/8 PoE, 6 USB 3.2, 2 isolation CAN Bus, 4 serial ports, NVMe storage, 5 extension slots, triple displays, together with a wide-range 9~36VDC power input with IGN control, to make it a sophisticated in-vehicle computer.

To work at the edge AI, the user can install LTE/5G/Wi-Fi 5/6 modules, along with Hailo AI accelerator (20TOPS) modules to deploy AI services. VTC 7270-xC4 can be operated with the temperature of -40°C~70°C and comply with MIL-STD-810H military standard for vibration/shock resistance. The VTC 7270-xC4 is compliant with CE/FCC Class A, UKCA and Emark (E13).

◆ Specifications

CPU

- ◆ Intel® 12th Gen Alder Lake S (65W/35W), Chipset: Intel R680E
- ◆ Core-i3 12100E/TE, 4c/8t, base frequency 3.2GHz/2.1GHz
- ◆ Core-i5 12500E/TE, 6c/12t, base frequency 3.0GHz/1.9GHz
- ◆ Core-i7 12700E/TE, 12c/20t, base frequency 2.1GHz/1.4GHz
- ◆ Core-i9 12900E/TE, 16c/24t, base frequency 2.3GHz/1.1GHz
- ◆ Graphics:
 - Intel® UHD Graphics 770, 1.55GHz
 - Max resolution: 4096x2160@60Hz(HDMI)
 - DirectX: 12, OpenGL: 4.5

Memory

- ◆ 2 x SO-DIMM, DDR5-4800MHz
- ◆ 8GB in default, 128GB in max., ECC & Dual-channel support

Storage

- ◆ 2 x 2.5" SSD (15mm height, removable)
- ◆ 1 x M.2 Key M (PCIe 4.0x4), NVMe SSD or Hailo AI card in option
- ◆ 1 x mPCIe slot (PCIe 4.0, SATA 3.0, USB 2.0), mSATA or Wi-Fi module in option

Expansion Slots

- ◆ 1 x mPCIe slot (USB 3.2, PCIe 4.0, SATA 3.0), SIM supports, LTE/5G or Wi-Fi module in option
- ◆ 1 x M.2 3042/50/52 Key B socket (USB 3.2/2.0), SIM supported
- ◆ 1 x M.2 3030 Key E socket (PCIe 4.0x2 & USB 2.0), Wi-Fi module or Hailo AI card in option

Display

- ◆ 1 x HDMI 2.0a/b, up to 3840x2160@60Hz
- ◆ 1 x VGA, up to 2560x1600@60Hz; 1 x DP, 4096x2304@60Hz

PoE+

- ◆ 4-port / 8-port independent 2.5GbE, RJ45 connector
 - 9Kbyte Jumboframe
 - IEEE 802.3af/at, total 40W
 - PTP (IEEE 1588) support
 - Controller: Intel® I225-IT

GbE

- ◆ 1-port independent GbE, RJ45 connector
 - vPro (iAMT) support
 - 9Kbyte Jumboframe
 - 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 5Gbit/s link speed & compliance with USB 2.0 (LS/FS/HS link speed)
- ◆ 1 x USB 2.0, wafer-type reserved

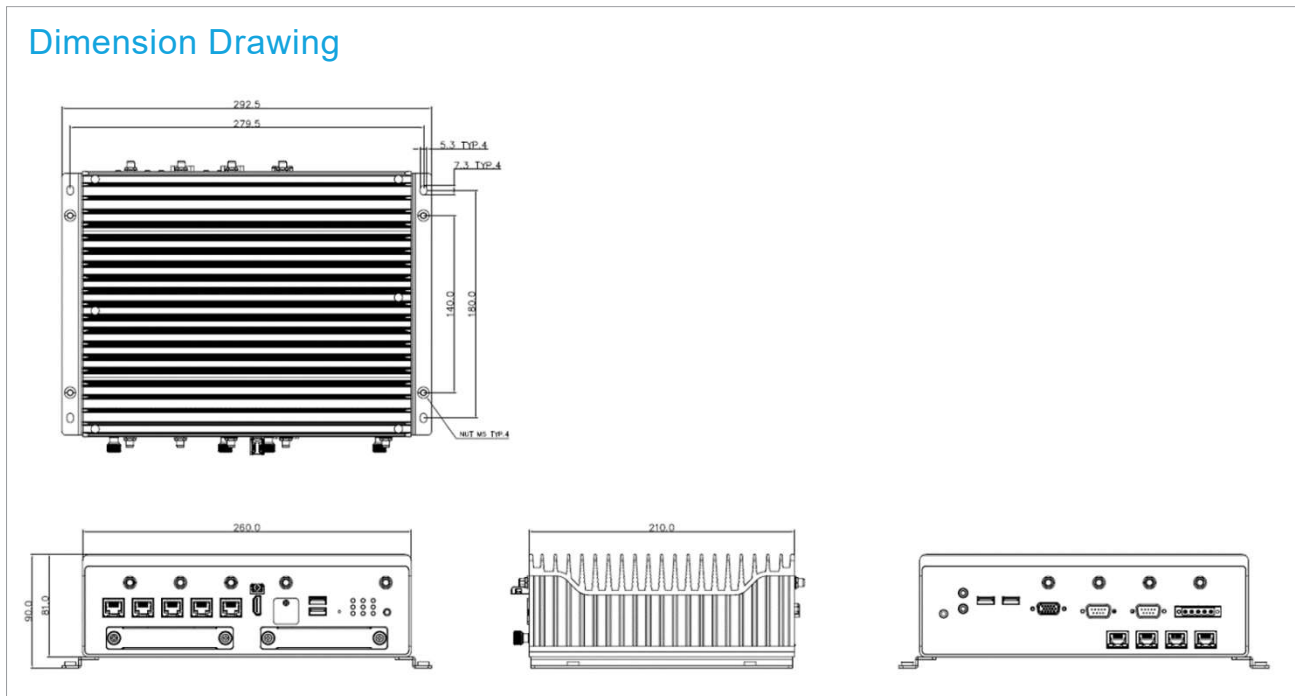
Serial Port

- ◆ 2 x Full RS232/422/485
- ◆ 2 x Full RS232 reserved for option (wafer connectors)
- ◆ RS232 working voltage, +-9V, baud rate up to 115.2kb/s
- ◆ 2-wire RS-485 (Baud rate: 300~115.2Kbps, data bit: 7/8-bit, stop bit: 1/2-bit, DATA+, DATA-, GND)

Security

- ◆ TPM 2.0: Infineon SLB9665TT2.0FW5.62

Dimension Drawing



Audio

- ◆ Line-out, unbalance stereo, left & right channel
- ◆ Line-in & MIC-in, stereo

MEMS Sensor

- ◆ 3D accelerometer and 3D gyroscope
- ◆ STLSM6DSLTR

DI/DO

- ◆ 4-bit input
 - Source: 9~36VDC(12V@1.1mA/24V@2.2mA)
 - External: 0~33VDC pull-high, high-level, 3.3 - 33 VDC; low-level, 0 - 2 VDC
- ◆ 4-bit output
 - Source: 9~36VDC (nominal 35mA@24V)
 - External: 5~27VDC 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 2.0A/2.0B
- ◆ IEC 61000-4-2 Electrostatic Discharge (ESD): ±8KV/15KV (contact/air), 2.5KV isolated

GNSS

- ◆ u-blox NEO-M9N GNSS module for GPS/Glonass/QZSS/Galileo/Beidou. Optional DR (Dead Reckoning) function, NEO-M8U/M8L

Power Supply

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

I/O ports, Front-Plate

- ◆ ATX power & Reset button
- ◆ 9 x LED Indicators, SIM1-1 & SIM2-1
- ◆ 2 x USB 3.2 type A, 1 x HDMI, 1 x DP
- ◆ 4 x 2.5G PoE (RJ45), 1 x GbE 9(RJ45)
- ◆ 1 x Multi-port DB15 (4 x DI, 4 x DO, 2 x CAN)
- ◆ 1 x SMA GNSS and 2 x rp-SMA WiFi, 2 x spare antenna holes

I/O Ports, Rear Plate

- ◆ 2 x RS232 (DB9), 2 x RS232/422/485 (DB9)
- ◆ 4 x USB 3.2 type A, 1 x VGA
- ◆ 1x Mic-in, 1 x Line Out
- ◆ 4 x 2.5G PoE (RJ45)
- ◆ 4 x SMA antenna for LTE/5G
- ◆ 5-pin Phoenix for 9~36VDC-in

Dimensions & Weight

- ◆ 260.0mm x 210.0mm x 81.0mm (w/o mount bracket)
- ◆ 5.5kg

Environment

- ◆ Operating temperatures: -40°C~60°C (35W CPU + 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@5~500 Hz
- ◆ 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 64-bit/ Windows 10 IOT 64-bit, Windows 11
- ◆ Linux (Ubuntu 18.04)

Options

CPU			
Model No.	Core	Freq.	TDP
Core™ i9-12900E/12900TE	4c	3.2/2.1GHz	60W/35W
Core™ i7-12700E/12700TE	6c	3.0/1.9GHz	65W/35W
Core™ i5-12500E/12500TE	12c	2.1/1.4GHz	65W/35W
Core™ i3-12100E/12100TE	16c	2.3/1.1GHz	65W/35W
SO-DIMM DDR5-4800MHz			
64GB (2023')	32GB	16GB	8GB
PoE*			
Model No.	Port	PSE (W)	
VIOD-POE4-04	4	60W	
Others			
Hailo AI card (Key E, PCIe x2)		Hailo AI card (Key M, PCIe x4)	

Order Information

VTC7270-xC4 (P/N: TBD)

Intel® Alder-lake S, 4/8x 2.5GbE PoE + 1x GbE, 6x USB3.2, 4x Serial, 2x 2.5"SSD, 2x CAN, 9~36VDC/IGN