



VTC 1031



VTC 1031-C2



## Main Features

- Intel Atom® x6413E quad-core processor, 9W
- Compact and fanless design
- 5G NR and Wi-Fi 6/6E wireless communication options
- Built-in U-blox M9N GNSS, optional dead reckoning support
- Built-in 1 x CAN bus 2.0B (optional SAE J1939)
- Wide range DC input from 9~36V
- 2 x POE support, total 60W (VTC 1031-C2)
- 1 x mini-PCIe + 2 x M.2 socket expansions
- Optional AI accelerator M.2/mPCIe module
- Certified by CE/UKCA/FCC/E13 mark

## Product Overview

VTC 1031 features next-generation Intel Atom® x6413E processor quad-core 1.5GHz, with powerful graphic and multimedia enhancement. It offers an onboard CAN 2.0B, an optional OBD interface (SAE J1939) for vehicle diagnostics & driver behavior management, an advanced GNSS receiver supporting GPS+QZSS/Glonass/Galileo/Beidou, and an optional dead reckoning. Moreover, for connectivity, it provides WLAN (Wi-Fi 5/6/6E) and WWAN (LTE/5G NR) wireless data. In consideration for convenience, there are dual micro-SIMs and one micro-SIM with an external access design, allowing users to easily access the micro-SIM cards. Equipped with an optional AI accelerator M.2/mPCIe module, the VTC 1031 also functions as a reliable AI edge computing platform, providing in-vehicle innovative AI solutions. With a rugged, fanless, and compact enclosure, this fanless computer can be easily installed.

The VTC1031-C2 provides dual IEEE802.3af/at PoE functions and is suited for most PoE devices. This includes connecting with wireless access points and IP cameras. Furthermore, an additional 12VDC output can be provided for external display via easy power wire arrangement. VTC 1031 is a flexible in-vehicle fanless computer that meets the various demands for telematics applications, such as wireless gateway, infotainment, fleet management, dispatching system, AI edge computing, and mobile video surveillance.

## Specifications

### CPU

- Intel Atom® x6413E quad-core processor, 1.5GHz, TDP 9W

### Memory

- 1 x 260-pin DDR4 SO-DIMM socket support 3200MHz up to 32GB. Default 2666MHz, 4GB
- With In-Band ECC (IBECC)

### Video Output

- 1 x HDMI 1.4b up to 3840 x 2160@30Hz
- 1 x VGA port 1920 x 1200@60Hz

### Storage

- 1 x 2.5" SATA 3.0 internal drive bay (9.5mm)
- 1 x M.2 key M 2280 for SATA 3.0

### Expansion

- 1 x Full size mini-PCIe socket (USB 2.0, PCIe 3.0), BOM optional M.2 3042 Key B socket (USB 2.0, USB 3.2 Gen 2) for LTE/5G NR module with 1 x internal micro-SIM and 1 x external micro-SIM
- 1 x M.2 2230 Key E socket (USB 2.0, PCIe 3.0 x2), BOM optional M.2 2230 Key E socket (USB 2.0, PCIe 3.0, PCIe 3.0)
- 1 x M.2 3042/3050/3052 Key B socket (USB 2.0, USB 3.2 Gen 2) for LTE/5G NR module with 1 x internal micro-SIM and 1 x external micro-SIM

### GNSS and Onboard Sensor

- 1 x Default U-blox NEO-M9N GNSS module for GPS+QZSS /Glonass/

### Galileo/Beidou

- Optional M8U/M8L modules with dead reckoning available
- 1 x 3D accelerometer and 3D gyroscope

### LAN and Power over Ethernet

- 1-Port LAN RJ45, 10/100/1000/2500 Mbps Ethernet, Intel® Ethernet Controller I225-IT (support WOL)
- 1-Port LAN RJ45, 10/100/1000 Mbps Ethernet, Marvell Ethernet PHY 88E1512
- 2-Port LAN RJ45, 10/100/1000 Mbps Ethernet, PoE 802.3af/at, max 60W (VTC 1031-C2)

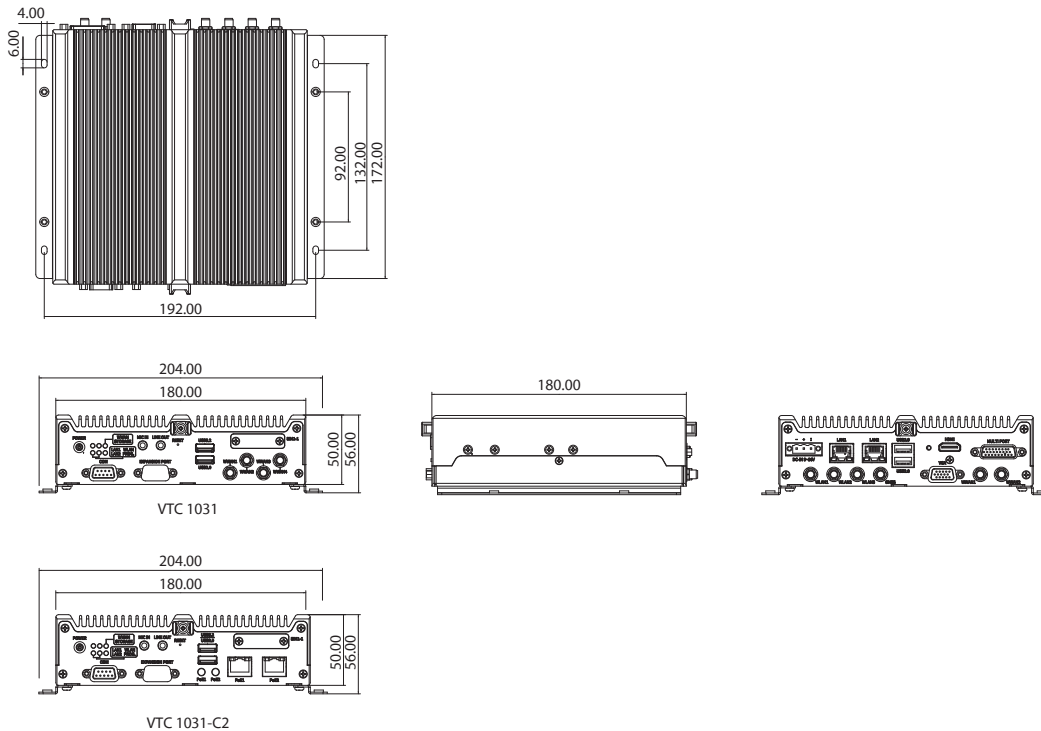
### Security

- TPM 2.0: Infineon SLB9670VQ2.0 FW7.62

### I/O Interface-Front

- 6 x LED indicators (including 1 x programmable LED)
- 1 x USB 3.2 Gen 2 type A (5V/0.9A)
- 1 x USB 2.0 type A (5V/0.5A)
- 1 x Externally accessible micro-SIM card sockets with cover
- 1 x Reset button
- 1 x Power button
- 1 x DB9 (COM) for full RS232/422/485
- 1 x Mic-in, 1 x Line-out
- 1 x DB9 for Expansion Port (optional)
- 2 x RJ45 PoE, including 2 x PoE LED light (VTC 1031-C2)
- 4 x SMA connector holes for WWAN (VTC 1031)

## Dimension Drawing



### I/O Interface-Rear

- 1 x HDMI
- 1 x VGA
- 1 x LAN (LAN1) RJ45, 10/100/1000/2500 Mbps
- 1 x LAN (LAN2) RJ45, 10/100/1000 Mbps
- 2 x USB 2.0 type A (5V/0.5A)
- 1 x DB26 (MULTI PORT)
  - 1 x Isolated CANBus 2.0B
  - 1 x RS232 Tx/ Rx
  - 1 x GNSS Speed/Direction
  - 5 x DI and 4 x DO
  - 2 x RS485
  - 12V/ 2A DC output
  - GND
- 1 x 3-pin terminal block for power/ignition input
- 1 x SMA connector for GNSS
- 2 x SMA connector holes for WWAN
- 3 x RP-SMA connector holes for WLAN

### Power Management & Software Support

- Power input 9~36VDC
- Cranking voltage: 6V~9V (< 30 seconds)
- Reverse protection, OCP & UVP
- Selectable boot-up & shut-down voltage for low power protection by software
- Setting 8-level power on/off delay time by software
- 10~255 seconds WDT support, setup by software
- SDK (Windows/Linux) including utility and sample code

### Operating System

- Windows 11/Windows 10/Linux

### Dimensions

- 180mm (W) x 180mm (D) x 50mm (H)

### Weight

- VTC 1031: 1.91kg
- VTC 1031-C2: 2.0kg

### Environment

- Operating temperatures

- -40°C to 70°C (w/ industrial SSD) with air flow
- Storage temperatures: -40°C to 85°C
- Relative humidity: 90% (non-condensing)
- Vibration (random)
  - 2g@5~500 Hz (in operation, SSD)
- Vibration (SSD)
  - Operating: MIL-STD-810H, Method 514.8C, Procedure 1, Category 4, common carrier US highway truck vibration exposure
  - Storage: MIL-STD-810H, Method 514.8E, Procedure 1, Category 24, minimum integrity test
- Shock (SSD)
  - Operating: MIL-STD-810H, Method 516.8, Procedure I, functional shock=40g
  - Non-operating: MIL-STD-810H, Method 516.8, Procedure V, crash hazard shock test=75g

### Certifications

- CE
- UKCA
- FCC Class A
- E13 mark

## Ordering Information

### • VTC 1031 (P/N: 10V00103100X0)

Intel Atom® x6413E processor 1.5GHz with 4GB DDR4, U-blox NEO-M9N GNSS module, 1 x CAN 2.0B, 1 x VGA output, 1 x HDMI output, 1 x internal SSD tray, 2 x LAN RJ45, 1 x mini-PCIe slot, 2 x M.2 slots, 2 x micro-SIMs, 1 x USB 3.2 Gen 2, 3 x USB 2.0, 1 x full RS232/422/485, 1 x RS232 Tx/ Rx, 2 x RS485, 5 x DI & 4 x DO

### • VTC 1031-C2 (P/N: 10V00103101X0)

Intel Atom® x6413E processor 1.5GHz with 4GB DDR4, U-blox NEO-M9N GNSS module, 1 x CAN 2.0B, 1 x VGA output, 1 x HDMI output, 1 x internal SSD tray, 2 x LAN RJ45, 1 x mini-PCIe slot, 2 x M.2 slots, 2 x micro-SIMs, 1 x USB 3.2 Gen 2, 3 x USB 2.0, 1 x full RS232/422/485, 1 x RS232 Tx/ Rx, 2 x RS485, 5 x DI & 4 x DO, 2 x PoE RJ45