VTC 6231-IP

Intel Atom® x7433RE Fanless In-Vehicle Computer
with E-mark Conformity

Main Features

- Intel Atom® x7433RE processor, TDP 9W
- Eight SIM cards + four WWAN modules support
- Built-in u-blox-M9N GPS
- Built-in CAN FD
- 1 x External storage (compatible with 15mm disk)
- E-mark conformity
- 3 x M.2 + 2 x Mini PCIe slot expansion
- Wide voltage DC 9V~36V power input
- Two video outputs: one VGA and one HDMI®
- 1 x Mic in, 1 x Line out, 1 x Line In
- Full IP66 protection

Product Overview

The VTC 6231-IP, based on Intel Atom® x7433RE processor, is specifically comply with stringent E-mark standard in rugged, fanless, and compact mechanism. The VTC 6231-IP provides complete communication capability between vehicle and computer with build-in CAN FD interface. The VTC 6231-IP features rich WLAN and WWAN wireless connectivity. With dual SIM cards per modem support, the VTC 6231-IP allows eight SIM cards backup each other for a better connectivity quality by software. In addition, eight SIM cards and four WWAN modules architecture can increase the bandwidth for a faster data transmission speed. Equipped with intelligent power management, the VTC 6231-IP can be waked on by ignition, RTC timer or SMS message remotely. By integrating the variety of I/O ports and dual Mini PCIe slots, three M.2 slots expansibility, up to dual screens via VGA and HDMI® connections, also compliant with IP66 rating, the VTC 6231-IP keeps the flexibility to meet the demand for different vehicle applications, such as infotainment, dispatching system, cellular/wireless network connectivity, and video surveillance. The design of dual Mini PCIe slots can solve the potential request from the market when needed.

Specifications

Processor
- Intel Atom® x7433RE processor, TDP 9W

Memory
- 1 x DDR5 4800 SO-DIMM, up to 16GB, default 8GB

Display Interface
- 1 x VGA, up to 1920x1200@60Hz
- 1 x HDMI® 2.0, up to 4096x2160@60Hz

Storage
- 1 x 2.5" SATA 3.0 external SSD (compatible with 15mm drive)
- 1 x mSATA (occupies one Mini PCIe slot)

Expansion Slot
- 2 x M.2 Key B 3042/3050/3052 (USB 2.0, USB 3.2 Gen 2)
  - Support LTE/5G NR modules with 2 x external nano-SIM
- 1 x Full-size Mini PCIe slot (USB 2.0, SATA, PCIe 3.0)
  - Support mSATA (default), BIOS select (USB 2.0) for LTE with 2 x external nano-SIM
  - BOM option (USB 2.0, PCIe 3.0) for WLAN, LAN2 will be disabled
- 1 x M.2 Key E 2230 (PCIe 3.0 x1, USB 2.0)
  - BOM optional Mini PCIe (PCIe 3.0 x1, USB 2.0) for Hailo module
- 1 x Full-size Mini PCIe slot (USB 2.0, PCIe 3.0)
  - Support a Wi-Fi module
  - BOM optional M.2 Key B 3042/3050/3052 (USB 2.0, USB 3.2 Gen 2) for an LTE/5G NR module with 2 x external nano-SIM

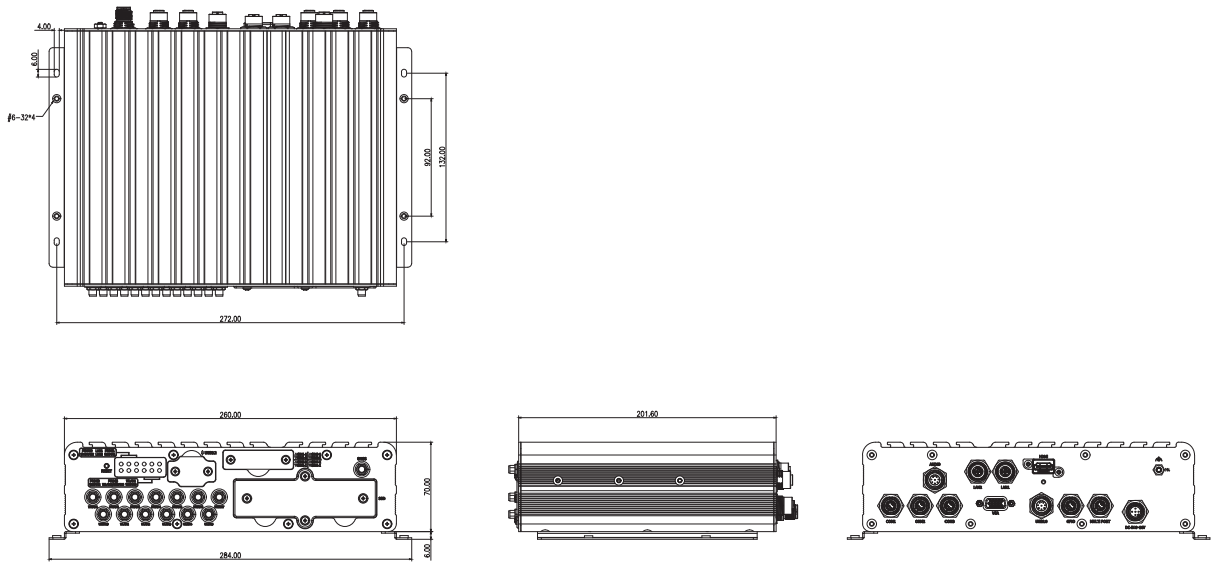
Sensor
- 1 x Default u-blox NEO-M9N GNSS module for GPS/GLONASS/ QZSS/ Galileo/Beidou
- Optional M9V modules with dead reckoning available
- G Sensor (3-axis, 10-bit resolution)

System Capabilities
- TPM 2.0: Infineon SLB 9670VQ2.0

I/O Interface Front
- 12 x LED indicator (including 3 x programmable LED)
- 8 x Externally accessible nano-SIM slots with cover
- 1 x 2.5" SATA 3.0 SSD tray (removable, 15mm)
- 1 x Reset button
- 2 x USB 3.2 Gen 2, Type-A
- 14 x SMA antenna

I/O Interface Rear
- 1 x 5-pin M12 A-coded connector
  - Support DC 9V~36V power input with ignition + GND
- 2 x 2.5GbE M12 X-coded connector, Intel® I226-IT
- 1 x M12 A-coded connector with two USB 2.0
- 1 x M12 A-coded conncetor (AUDIO), supports 1 x Mic-in, 1 x Line-out, 1 x Line-In
- 1 x VGA, 1 x HDMI® 2.0
- 2 x M12 A-coded connector (COM1, COM2), supports selectable RS-232/422/485 full
- 1 x M12 A-coded connector (COM3), supports RS-232 full

Dimension Drawing



- 1 x M12 A-coded connector (MULTI PORT)
  - 1 x CAN FD (isolated)
  - 1 x GNSS Speed/Direction
  - DC 12V/2A output
  - GND
- 1 x M12 A-coded connector (GPIO)
  - 4 x DI
  - 4 x DO
  - GND

Power Management

- DC 9V~36V power input
- Selectable boot-up & shut-down voltage for low power protection by software
- Setting 8-level power on/off delay time by software
- Support S3/S4 suspend mode
- 10~255 seconds WDT support, setup by software
- SDK (Windows/Linux) including utility and sample code

Operating System

- Windows 11
- Windows 10, 64bit
- Linux 4.x

Mechanical

- Dimensions: 260.0mm (W) x 201.6mm (D) x 70.0mm (H) (10.24" x 7.94" x 2.75")
- Weight: 2.8kg

Environment

- Temperature:
  - -40°C~70°C (w/ industrial SSD) with air flow
  - Storage temperature: -40°C~85°C
- Relative humidity: 10%~90% (non-condensing)
- Vibration
  - IEC 60068-2-64, 2G for SSD
  - Operating: MIL-STD-810H, 514.8C Procedure 1, Category 4
  - Storage: MIL-STD-810H, 514.8E Procedure 1, Category 24
- Shock
  - 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
- FCC Class A
- E13 mark
- IP66 Compliance

Ordering Information

- **VTC 6231-IP (P/N: 10V00623101X0)**
  Intel Atom® x7433RE processor, 8GB DDR5 SO-DIMM, DC 9V~36V input, 1 x VGA, 1 x HDMI®, 2 x LAN, 2 x Selectable RS-232/422/485 full, 1 x RS-232 full, 8 x GPIO, 2 x USB 3.2, 2 x USB 2.0, Full IP66 protection

We reserve the right to change specifications and product descriptions at any time without prior notice.