VTC 6210-R

Intel Atom® E3845 Fanless Rolling Stock Computer
with EN50155 Conformity

Microsoft Azure
Certified

Main Features

- Intel Atom® processor quad core E3845, 1.91GHz
- Three SIM cards + dual WWAN modules support
- Built-in u-blox-M8 GPS
- Built-in CAN Bus 2.0B
- Wake on RTC/SMS via WWAN moduleWake on RTC/SMS via WWAN module
- EN50155 conformity
- 3 x mini-PCIe socket expansion
- 4 x DI + 4 x DO w/ isolation
- 2 x RS232 + 1 x RS422/485 w/ isolation
- Voice communication via WWAN module
- 3KVDC power isolation protection (VTC 6210-RF only)

Product Overview

VTC 6210-R, based on Intel Atom® quad core processor E3845 (1.91GHz), is specifically designed for rolling stock environment. It allows VTC 6210-R to comply with stringent EN50155 standard in rugged, fanless and compact mechanism. VTC 6210-R provides complete communication capability between automotive and computer with build-in CAN Bus 2.0B interface. VTC 6210-R features rich PAN, WLAN and WWAN wireless connectivity. With dual SIM cards support, VTC 6210-R allows three SIM cards backup each other for a better connectivity quality by software. In addition, three SIM cards and dual WWAN modules architecture can increase the bandwidth for a faster data transmission speed. Not only data transmission, VTC 6210-R also supports two-way voice communication. Equipped with intelligent power management, VTC 6210-R can be waked on by ignition, RTC timer or SMS message remotely. By integrating the variety of I/O ports and 3 x mini-PCIe sockets expansibility, VTC 6210-R keeps the flexibility to meet the demand for different rolling stock applications, such as infotainment, dispatching system and video surveillance.

Specifications

CPU

- Intel Atom® processor quad core E3845, 1.91GHz

Memory

- 1 x 204-pin DDR3L SO-DIMM socket support 1333MHz up to 8GB. Default 4GB

Storage

- 1 x 2.5" SSD/HDD SATA 2.0 (externally accessible, optional lockable storage available)
- 1 x CFast (externally accessible)

Expansion

- 1 x Full size mini-PCIe socket (USB 2.0) for LTE module with 2 x external SIM
- 1 x Full size mini-PCIe socket (USB 2.0, PCIe 2.0) for LTE module with 1 x internal, 1 x external SIM
- 1 x Full size mini-PCIe socket (USB 2.0, PCIe 2.0)

Function

- 1 x u-blox NEO-M8N module (support GPS/Gloness/QZSS/Galileo/Beidou)
- Built-in G-sensor

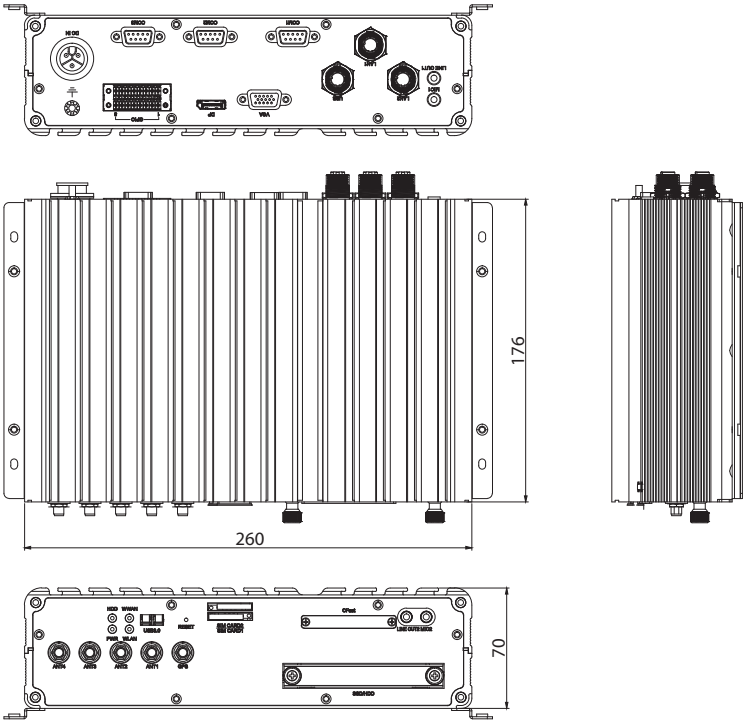
I/O Interface-Front

- 4 x LED for power, storage, WWAN, WLAN
- 2 x Externally accessible SIM card socket (selectable)
- 1 x Phone jack 3.5mm for 1 x Mic-in
- 1 x Phone jack 3.5mm for 1 x Line-out
- 1 x Externally accessible 2.5" SATA 2.0 SSD/HDD tray
- 1 x Externally accessible CFast card socket with cover
- 1 x Reset button
- 1 x Type A USB 3.0 compliant host, supporting system boot up
- 4 x Antenna hole for WWAN/WLAN/BT
- 1 x Antenna hole for GPS

I/O Interface-Rear

- 1 x Circle type DC input 9~60 VDC with ignition and typical 19W power consumption
  - 24 VDC (16.8~31.2V), non-isolation
  - 36 VDC (25.2~46.8V), non-isolation
  - 110 VDC (77~143V), w/ 3KVDC isolation
- 1 x M12 with two USB 2.0 compliant host, supporting system boot up
- 2 x M12 10/100/1000 Ethernet
- 1 x Phone jack 3.5mm for 1 x Mic-in

Dimension Drawing



- 1 x Phone jack 3.5mm for 1 x Line-out
- 1 x DB-15 VGA, resolution up to 2560 x 1600 @60Hz
- 1 x DP port, resolution up to 2560 x 1600 @60H
- 2 x DB-9 RS-232 (isolation)
- 1 x DB-9 RS-422/485 (isolation)
- 1 x 16-pin terminal block
  - 1 x CAN Bus 2.0B (onboard)
  - 4 x DI, 4 x DO with isolation
    Input voltage (internal type): 5 VDC TTL (default)
    Input voltage (source type): 3~12 VDC (programmable digital output or optional isolation)
    Digital output (sink type): 5 VDC TTL (default), max current: 20mA
    Digital output (source type): 3~19 VDC, max current: 150mA

Power Management

- Power input 24/36VDC w/o isolation, 110VDC w/ isolation
- Ignition On/Off control
- Programmable On/Off delay timer
- System wake up event
  - Ignition switch
  - RTC timer ALARM interrupt
  - Cellular MODEM wakeup signal
- System wake up condition
  - Wake up event is triggered, and DC input voltage is greater than UVP threshold
  - Timer delay is only applicable for ignition on
- System power down condition
  - Soft off, or ignition off
- Timer delay is only applicable for ignition off

Operating System

- Windows 8, WES8
- Window 7, WES7
- Linux kernel 3.X

Dimensions

- 260mm (W) x 176mm (D) x 70mm (H) (10.24" x 6.93" x 2.75")
- Weight: 2.5kg

Environment

- Operating temperatures
  - -40°C to 70°C (w/ industrial SSD) with air flow
  - -20°C to 50°C (w/ commercial HDD) with air flow
- Storage temperatures: -40°C to 85°C
- Relative humidity: 10% to 90% (non-condensing)
- Shock (SSD/HDD)
  - Operating: MIL-STD-810G, Method 516.6, Procedure I, functional shock=20g
  - Non-operating: MIL-STD-810G, Method 516.6, Procedure V, crash hazard shock test=75g

Standards/Certifications

- CE
- FCC Class A
- EN 50155: 2017
  - Ambient temperature EN 50155, Class OT4 (-40~70°C), 85°C for 10 minutes
  - Interruptions of voltage supply class
  - Supply change over class C1, C2
  - EMC EN 50121-3-2: 2016
  - Environment EN 60068-2-1, EN 60068-2-2
  - Shock and vibration IEC 61373 Class B
  - Protective coating class PC1 (PC2, by request)
- EN 45545-2:2013+A1:2015 (PCB)

Ordering Information

- **VTC 6210-RA (P/N: 10V00621003X0)**
  Intel Atom® processor E3845 1.91GHz CPU, 4GB DDR3L SO-DIMM, DC input 24/36 VDC w/o isolation, VGA/DP output, 2 LAN, 2 x RS-232, 1 x RS-422/485, 4 x GPIO, 3 x USB

- **VTC 6210-RF (P/N: 10V00621005X0)**
  Intel Atom® processor E3845 1.91GHz CPU, 4GB DDR3L SO-DIMM, DC input 110 VDC w/ isolation, VGA/DP output, 2 LAN, 2 x RS-232, 1 x RS-422/485, 4 x GPIO, 3 x USB