UST510-52B-FL NEW

Fanless Embedded System with LGA1151 9th/8th Gen Intel® Core™ i7/i5/i3, Celeron®, Pentium® or Xeon® Processor for Vehicle PC

Features
- CE, FCC and E-Mark certified
- LGA1151 9th/8th Gen Intel® Core™ i7/i5/i3, Celeron®, Pentium®, or Xeon® processor (up to 65W) with Intel® C246 (Coffee Lake)
- Fanless and wide operating temperatures from -40°C to +70°C
- Up to 8 GbE PoE port by RJ-45 connector type
- Supports M.2 Key B and M.2 Key E for wireless communication module
- Intelligent solution of Smart Ignition for power on/off schedule, vehicle battery protection and different power mode
- Convenient 2 hot-swappable HDD/SSD slots and flexible I/O windows

Specifications

**Standard Color** Silver

**Construction** Aluminum extrusion and heavy-duty steel, supports up to IP40

**CPU** LGA1151 9th/8th Gen Intel® Core™ i7/i5/i3, Celeron®, Pentium®, and Xeon® processor (CPU TDP max. up to 65W)

**Chipset** Intel® C246

**System Memory** 2 x 260-pin DDR4-2666 ECC/non-ECC SO-DIMM, up to 64GB

**BIOS** AMI

**TPM** TPM 2.0

**System I/O Outlet**
- **Serial** 2 x terminal block RS-232/422/485 (4-wire)
- **Display** 1 x VGA (supports up to 1920 x 1200 @60Hz)
- **Audio** 1 x Mic-in, 1 x Line-out
- **Ethernet** Front side:
  - 1 x RJ-45 GbE LAN (Intel® i211-AT)
- Rear side (flexible LAN selection):
  - 8 x RJ-45 GbE LAN (Intel® i211-AT)
- **USB** 4 x USB 3.0
- **DIO** 1 x Terminal block isolated 6-in/2-out DIO (isolation voltage: 2 kV)

**Others**
- 1 x Reset button
- 4 x Antenna opening
- 2 x External accessible SIM card socket
- 2 x Flexible I/O window

**Expansion Interface**
- 1 x Full-size Rev.1.2 PCI Express Mini Card slot
- 1 x Half-size Rev.1.2 PCI Express Mini Card slot
- 1 x M.2 3050/3042 Key B
- 1 x M.2 2230 Key A & E

**Storage**
- **SATA Drive** 2 x 2.5” 9.5 mm swappable SATA drive with 2 SATA, Intel® RAID 0/1 supported
- **mSATA** 2 x mSATA (occupied 2 x PCI Express Mini Card slot)

**Watchdog Timer** 255 levels, 1 to 255 sec.

**Power in**
- **Supply** General use: 1 x Terminal block, 9 to 36 VDC
- **Consumption** Vehicle: 1 x Terminal block, 12/24 VDC with smart ignition

**PoE (PSE, Power Sourcing Equipment)**
- **Performance** Up to 8 x RJ-45 output max. 90W supports PoE & PoE+
  - PoE (802.3af 15.4W/port)
  - PoE+ (802.3at 30W/port)

**System Indicator**
- 1 x LED indicator for SATA drive activity
- 1 x LED indicator for power

**Operating Temperature** -40°C to +70°C (-40°F to +158°F) with W.T. peripheral*

**Humidity** 0% to 95%, non-condensing

**Dimensions**
- 240 mm (9.45”) (W) x 210.5 mm (8.28”) (D) x 82.2 mm (3.23”) (H)
  - 200 mm (7.87") (W) x 202 mm (7.95") (D) x 77 mm (3.03") (H)
  - *Without wall mount

**Mounting** Wall mount

**Weight (net/gross)** 4.16 kg (9.17 lb)/4.82 kg (10.62 lb)

**Certifications**
- CE (Class A), FCC (Class A), E-Mark (E13) certified

**EMC**
- CE/FCC EN 55032 (Class A), EN 55035, FCC part 15 B (Class A), E-Mark ECE-R10

**Vibration Endurance**
- 3 Grms w/ SSD (5 to 500Hz, X/Y/Z direction; random, operating)
- 1 Grms w/ HDD (5 to 500Hz, X/Y/Z direction; random, operating)
- 2.5 Grms w/ HDD & Anti-Vibration Kit (5 to 500Hz, X/Y/Z direction; random, operating)
- MIL-STD-810G, Method 514.6C-VI Category 4 compliant

**EOS Support** Windows® 10 64-bit, Linux

**Software Support** AMS.AXView

*Wide Temperature. All W.T. supported products have to be sorted by Axiomtek.*
### Power Protection

- **OCP** (over current protection)
- **OVP** (over voltage protection)
- **UVP** (under voltage protection)
- **RPP** (reverse polarity protection)
- **ISO 7637-2 pulse 1, 2a, 2b, 3a, 3b, 4 (vehicle version)**

Setting for in-vehicle battery protection: system will be automatically turned down at low voltage level.

Setting for ignition control: system will activate a counter while in-vehicle battery at low voltage, ACC-ON delay and shut down delay.

### Ordering Information

#### Standard

- **UST510-52B-FL-A**
  - Fanless embedded system with 9th/8th gen Intel® desktop processor (LGA1151), C246, VGA, 2 HDMI, 6-in/2-out DIO, 2 COM, 4 USB 3.0, 8 RJ-45 PoE 1GbE LAN, 2 SATA drives and ACC ignition, and TDC*

* TDC: terminal block DC-in connector, DC voltage input

#### Optional

- **Anti-Vibration Kit**
  - (P/N: 8816N500040E)
  - For in-vehicle/rolling stock which improves HDD stability in NVR applications
- **Communication Modules**
  - 8816N5003A0E
  - AP1235 w/WT Wi-Fi kit for tBOX/UST SFP (E)
  - GPS kit M8U w/UDR for tBOX SFP (E)
  - 8816N8101DA0E
  - LTE SIMCOM SIM7100 (EU) for tBOX/UST SFP (E)
  - 8816N500040E
  - LTE SIM7100JC kit for tBOX500, JPN SFP (E)
  - E9083B50014
  - Wi-Fi M.2 2230 QCNFA364A 802.11AC+BT5/W

* Specifications and certifications may vary based on different requirements.

### Dimensions

![Dimensions Diagram]