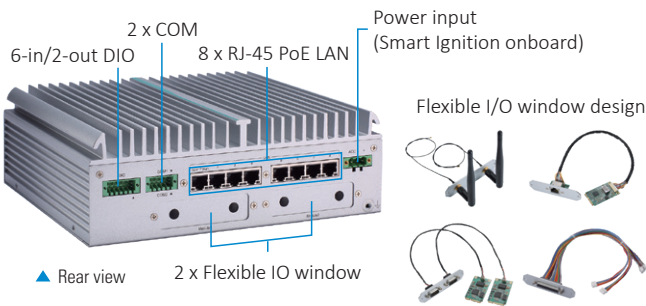
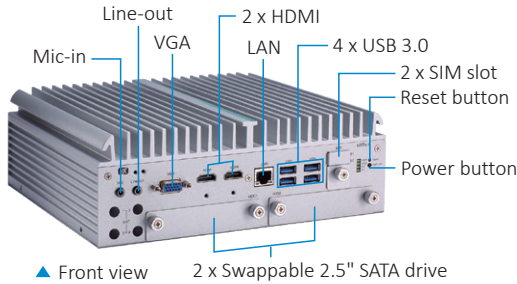


# UST510-52B-FL

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



## Features

- CE, FCC and E-Mark certified
- LGA1151 9th/8th Gen Intel® Core™ i7/i5/i3, Celeron®, Pentium®, and Xeon® processor (up to 65W) with Intel® C246
- Fanless and Wide operating temperatures from -40°C to +70°C
- Up to 8/16 GbE PoE port by M12/RJ-45 connector type; none PoE port LAN by RJ45 connector
- 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 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	1 x terminal block RS-232/422/485 (4-wire)	
	Display	1 x VGA (supports up to 1920 x 1200 @60Hz) 2 x HDMI (supports up to 4K/2K @30Hz)	
	Audio	1 x Mic-in, 1 x Line-out	
	Ethernet	Flexible LAN selection: <ul style="list-style-type: none"> <li>• 1 x Non-PoE RJ-45 GbE LAN + 8 x PoE RJ-45 GbE LAN with 2 SATA (Intel® I210-AT)</li> <li>• 1 x Non-PoE RJ-45 GbE LAN + 8 x PoE M12 A-code GbE LAN with 4 SATA (Intel® I210-AT)</li> <li>• 1 x Non-PoE RJ-45 GbE LAN + 16 x PoE RJ-45 GbE LAN with 4 SATA (Intel® I210-AT)</li> </ul>	
	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 mSATA/USB/PCIe)	
		1 x Half-size Rev.1.2 PCI Express Mini Card slot (1 x mSATA/USB)	
		1 x M.2 3050/3042 B-key	
1 x M.2 2230 A & E-key			
Storage	SATA Drive	2 x 2.5" 9.5 mm swappable SATA drive with 2 SATA, Intel® RAID 0/1 supported 4 x 2.5" 9.5 mm swappable SATA drive with 2 SATA, Intel® RAID 0/1/5/10 supported	
	mSATA	2 x mSATA (occupied 2 x PCI Express Mini Card slot)	
Watchdog Timer	255 levels, 1 to 255 sec.		
Power in	Power Supply	General use: 1 x Terminal block, 9 to 36 VDC (typical 24V) Vehicle: 1 x Terminal block, 9 to 36 VDC with smart ignition (typical 24V)	
	Power Consumption	8RJ 2SATA SKU: DC 24V@6.91A	
		8M12 4SATA SKU: DC 24V@7.57A 16RJ 4SATA SKU: DC 24V@7.75A	

## Specifications

PoE (PSE, Power Sourcing Equipment)	PoE Performance	Up to 8 x RJ-45 & 8 x M12/ 16 x RJ-45 PoE output max. 90W supports PoE & PoE+ <ul style="list-style-type: none"> <li>• PoE (802.3af 15.4W/port)</li> <li>• PoE+ (802.3at 30W/port)</li> </ul>
System Indicator	1 x LED indicator for SATA drive activity 1 x LED indicator for power 2 x Programmable	
Operating Temperature	-40°C to +70°C (-40°F to +158°F) with W.T. peripheral*	
Humidity	10% to 95%, non-condensing	
Dimensions	8RJ 2SATA SKU: 240mm (9.45") (W) x 210.5mm (8.29") (D) x 82.2mm (3.24") (H)* 8M12 4SATA SKU: 240mm (9.45") (W) x 210.5mm (8.29") (D) x 104.2mm (4.1") (H)* 16RJ 4SATA SKU: 240mm (9.45") (W) x 210.5mm (8.29") (D) x 104.2mm (4.1") (H)* *Without wall mount	
Mounting	Wall mount	
Weight (net/gross)	8RJ 2SATA SKU: 4.16 kg (9.17 lb)/4.82 kg (10.62 lb) 8M12 4SATA SKU: 4.81 kg (10.604lb)/6.06kg (13.36lb) 16RJ 4SATA SKU: 4.796kg(10.57lb)/6.05kg(13.33lb)	
Certifications	CE (Class A), FCC (Class A), E-Mark 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) 0.8 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	Win10/11 64-bit, Linux	
Software Support	AXView	

\*Wide Temperature. All W.T. supported products have to be sorted by Axiomtek.

## Ordering Information

### System

UST510-52B-FL-8RJ-2SATA (P/N: E274510100)	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 GbE LAN, 2 SATA drive, Smart Ignition, and TDC*	
UST510-52B-FL-8M12-4SATA (P/N: E274510101)	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 M12 PoE GbE LAN, 4 SATA drives, Smart Ignition, and TDC*	
UST510-52B-FL-16RJ-4SATA (P/N: E274510102)	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, 16 RJ-45 PoE GbE LAN, 4 SATA drives, Smart Ignition, and TDC*	

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

### Optional

Anti-Vibration Kit (P/N: 8816N5008A0E)	For in-vehicle/rolling stock which improves HDD stability in NVR applications	
Communication Modules	887451013A0E	M.2 GPS RYM8838 KIT(20) for UST(E)
	8816N810DA0E	GPS kit M8U w/UDR for tBOX SFP(E)
	886N50014A0E	MCR8822CE-P WiFi KIT(30)for tBOX(E)
	887451010A0E	LTE LE910C4-AP KIT for UST510(E)
	887451011A0E	LTE LE910C4-EU KIT for UST510(E)
	887451012A0E	LTE LE910C4-NF KIT for UST510(E)
	826K6400150E	QCNFA364 M2 WiFi W/WT for eBOX SFP

\*Specifications and certifications may vary based on different requirements.

## Packing List

- 1 x CPU thermal paste
- 4 x Memory thermal pads
- 1 x HDD screws x 8/16
- 1 x Power input 3-pin Terminal block
- 1 x COM Port 10-pin Terminal block
- 1 x DIO 12-pin Terminal block
- 1 x Wall mount kit
- 4 x Wall mount kit screws
- 4 x Mini Card slot screws
- 1 x M.2 Key A & E 2230 size slot screw
- 1 x M.2 Key B 3050/3052 size slot screw & holder

## 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

## Dimensions

