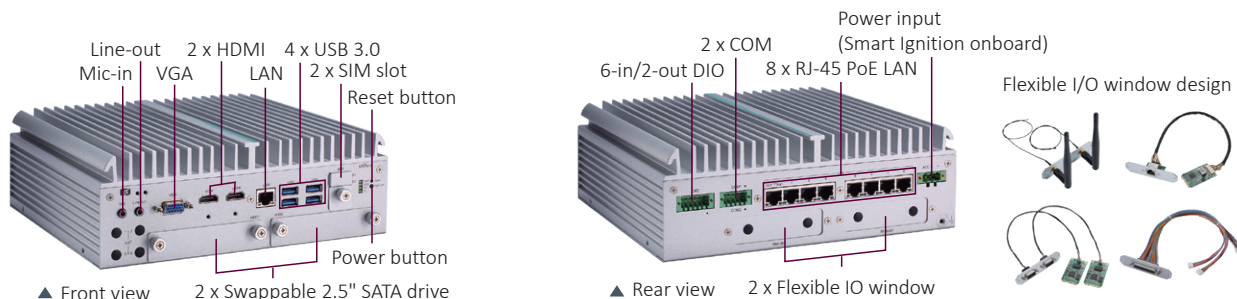


# UST510-52B-FL

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 vehicle power management (Smart Ignition)
- 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 MHz ECC/non-ECC SO-DIMM, up to 64GB														
BIOS	AMI														
TPM	TPM 2.0														
System I/O Outlet	<table><tr><td>Serial</td><td>1 x terminal block RS-232/422/485 (4-wire)</td></tr><tr><td>Display</td><td>1 x VGA (supports up to 1920 x 1200 @60Hz) 2 x HDMI (supports up to 4K/2K @30Hz)</td></tr><tr><td>Audio</td><td>1 x Mic-in, 1 x Line-out</td></tr><tr><td>Ethernet</td><td>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></td></tr><tr><td>USB</td><td>4 x USB 3.0</td></tr><tr><td>DIO</td><td>1 x Terminal block isolated 6-in/2-out DIO (isolation voltage: 2 kV)</td></tr><tr><td>Others</td><td>1 x Reset button 4 x Antenna opening 2 x External accessible SIM card socket 2 x Flexible I/O window</td></tr></table>	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
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														

## Specifications

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
Watchdog Timer	255 levels, 1 to 255 sec.	
Power	Power Supply	1 x Terminal block, 12 and 24V DC with smart ignition**
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+ • 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 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 (W x D x H)	8RJ 2SATA SKU: 240 x 210.5 x 82.2 mm (9.45" x 8.29" x 3.24")* 8M12 4SATA SKU: 240 x 210.5 x 104.2 mm (9.45" x 8.29" x 4.1")* 16RJ 4SATA SKU: 240 x 210.5 x 104.2 mm (9.45" x 8.29" x 4.1")* *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	Win 10/11 64-bit, Linux	

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

\*\*UST510 also supports 9 to 36VDC for general purpose. Please refer to the user manual for configuration settings.

## 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: 8816N5008AOE)	For in-vehicle/rolling stock which improves HDD stability in NVR applications	
Communication Modules	E29R329100	ACC329-330-109 (M.2 GNSS RYM8838)
	E29R318100	ACC318-501-203 (LTE NL668-EAU)
	E29R301103	ACC301-701-203(WiFi5 QCNFA364A)
AC DC Adapter	50906A24000E	Adapter 24V230W FSP230-AAAN3 WIRE FSP (only for office testing purpose)
Cable/Power Cord	594N3202730E	LAN cable M12-A male 8P to RJ-45
	599000001100	P Cord YP12/YC12_CY-U0032 YUNG_LI 1830mm
	59906000010E	Power Cord YP-12/YC-12(Japan)
	59903000000E	POWER CORD YP-22/YC-12 (Europe)
	59905000000E	POWER CORD YP-35/YC-12 (Australia)
	59904010000E	Power Cord/UK YP-61A/YC-12 L=1830mm

\*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

OC (over current protection)

OVP (over voltage protection)

UVP (under voltage protection)

RPP (reverse polarity protection)

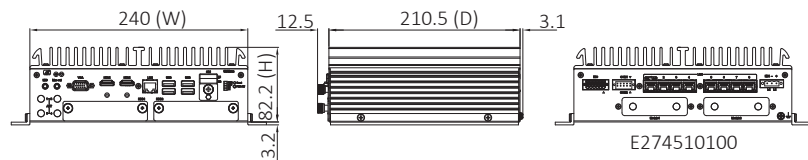
ISO 7637-2 pulse 1, 2a, 2b, 3a, 3b, 4 (vehicle version)

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

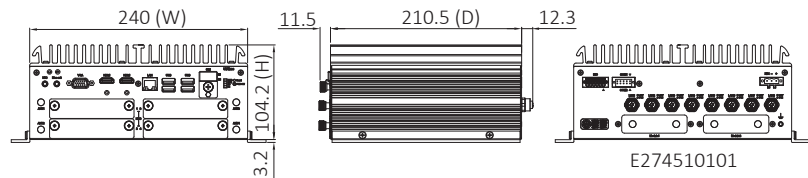
Setting for ignition control: system will activate a counter while in-vehicle battery at low voltage, IGN on delay and IGN off delay

## Dimensions

### UST510-52B-FL-8RJ-2SATA



### UST510-52B-FL-8M12-4SATA



### UST510-52B-FL-16RJ-4SATA

