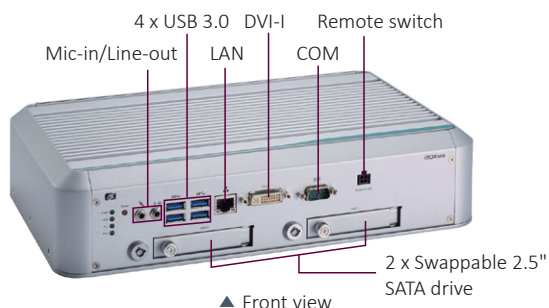


tBOX500-510-FL

Fanless Embedded System with 7th Gen Intel® Core™ i7/i5/i3 or Celeron® Processor for Railway, Vehicle and Marine PC



Features

- CE, LVD, FCC, EN 50155, EN 45545-2, and IEC 60945 certified; ISO 7637-2 compliant
- 7th gen Intel® Core™ i7/i5/i3 or Celeron® processor
- Power supply:
 - 24 to 110 VDC for railway version
 - 12/24 VDC for vehicle version
 - 24 VDC for marine version
- Value-added modules available for various I/O requirements (COM/LAN/DIO/PoE/CAN)
- Intelligent solution for vehicle power management (Smart Ignition)
- 2 swappable 2.5" SATA drives

Specifications

Standard Color	Silver
Construction	Aluminum extrusion and heavy-duty steel, IP30
CPU	Intel® Core™ i7-7600U 2C@2.8 GHz, TDP: 15W Intel® Core™ i5-7300U 2C@2.6 GHz, TDP: 15W Intel® Core™ i3-7100U 2C@2.4 GHz, TDP: 15W Intel® Celeron® 3965U 2C@2.2 GHz, TDP: 15W
Chipset	SoC integrated
System Memory	2 x DDR4-1866/2133 SO-DIMM, up to 32GB
BIOS	AMI
TPM	TPM 2.0



Specifications

System I/O Outlets	Serial	1 x DB9 serial console or RS-232/422/485
	Display	1 x DVI-I (up to 1920 x1200 @60Hz, 1 x VGA & 1 x DVI included)
	Audio	1 x Mic-in, 1 x Line-out
	Ethernet	1 x RJ-45 10/100/1000 Mbps Ethernet (Intel® I210-IT)
	USB	4 x USB 3.0
	Others	1 x Reset button 1 x Remote switch 4 x Antenna opening
Expansion Interface	3 x Full-size Rev.1.2 PCI Express Mini Card slot • 1 x mSATA/PCIe • 2 x USB/PCIe with SIM socket 2 x Value-added module slot	
Storage	SATA Drive	2 x Swappable 2.5" SATA drive (9.5 mm height), Intel® RAID 0/1 supported
	mSATA	1 x mSATA (occupied 1 x PCI Express Mini Card slot)
Watchdog Timer	255 levels, 1 to 255 sec.	
Power	Power Supply	Railway: 1 x M12, 24 to 110 VDC Vehicle: 1 x terminal block, 12/24 VDC with Smart Ignition Marine: 1 x terminal block, 24 VDC
PoE (PSE, Power Sourcing Equipment)	PoE Performance	Internal PoE SKUs equipped with VAM701/703/705/707 can support up to 8 configurable M12/RJ-45 PoE ports • PoE (802.3af 15.4W per port) • PoE+ (802.3at 30W per port)
System Indicator	1 x LED indicator for power 1 x LED indicator for SATA drive activity 2 x Programmable	
Operating Temperature	-40°C to +70°C (-40°F to +158°F) with W.T. peripheral*	
Humidity	0% to 95%, non-condensing	
Dimensions (W x D x H)	321 x 210.2 x 73.3 mm (12.64" x 8.28" x 2.89")	
Mounting	Wall mount	
Weight	3.5 kg (7.72 lb)/5.1 kg (11.24 lb)	
Certifications	CE (Class A), LVD, FCC (Class A), EN 50155**, EN 45545-2***, and IEC 60945 certified; ISO 7637-2 compliant	
EMC	CE/FCC	EN 61000-6-4 (Class A), EN 61000-6-2, FCC part 15 B (Class A)
	EN 50155	EN 50121-3-2, IEC 62236-3-2
	IEC 60945	IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6 CISPR 16-1-1, CISPR 16-1-2, CISPR 16-1-4
LVD	EN 60950-1	
Vibration Endurance	3 Grms with SSD (5 to 500Hz, X/Y/Z direction; random, operating) 1.5 Grms with HDD (5 to 500Hz, X/Y/Z direction; random, operating) 2 Grms with HDD & Anti-Vibration Kit (5 to 500Hz, X/Y/Z direction; random, operating) MIL-STD-810G, Method 514.6C-VI Category 4 compliant	
	EN 50155	EN 61373 category 1 class B
	IEC 60945	IEC 60068-2-6
Shock	EN 50155	EN(IEC) 61373 category 1 class B, half-sine pulse, 5g, 30ms (longitudinal direction), 3g, 30ms (vertical/transverse direction)
EOS Support	Windows® 10 64-bit, Linux	

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





**PSE series is compliant with EN 50155

***For EN 45545-2, test report is available exclusively



Ordering Information

System

tBOX500-510-FL-Celeron/i3/i5/i7-24-110MRDC (P/N: E26N500100) for i7-7600U (P/N: E26N500101) for i5-7300U (P/N: E26N500102) for i3-7100U (P/N: E26N500103) for 3965U	Fanless railway embedded system with Intel® Celeron® 3965U/Core™ i3-7100U/i5-7300U/ i7-7600U processor, 4 USB 3.0, DVI-I, LAN, serial console or RS-232/422/485, Mic-in & Line-out, two 2.5" SATA trays, M12 A-code DC-in, and 24 to 110 VDC	
tBOX500-510-FL-Celeron/i3/i7-TVDC (P/N: E26N500104) for i7-7600U (P/N: E26N500106) for i3-7100U (P/N: E26N500107) for 3965U	Fanless vehicle embedded system with Intel® Celeron® 3965U/Core™ i3-7100U/ i7-7600U processor, 4 USB 3.0, DVI-I, LAN, serial console or RS-232/422/485, Mic-in & Line-out, two 2.5" SATA trays, terminal block DC-in, and Smart Ignition *Not supporting PoE function	
tBOX500-510-FL-Celeron/i3/i5/i7-TMDC (P/N: E26N500108) for i7-7600U (P/N: E26N500109) for i5-7300U (P/N: E26N500110) for i3-7100U (P/N: E26N500111) for 3965U	Fanless marine embedded system with Intel® Celeron® 3965U/Core™ i3-7100U/i5-7300U/ i7-7600U processor, 4 USB 3.0, DVI-I, LAN, serial console or RS-232/422/485, Mic-in & Line-out, two 2.5" SATA trays, and terminal block DC-in	
tBOX500-510-FL-i5-POE-24-110MRDC (P/N: E26N500115)**	Fanless railway embedded system with Intel® Core™ i5-7300U processor, 4 USB 3.0, DVI-I, LAN, serial console or RS-232/422/485, Mic-in & Line-out, two 2.5" SATA trays, M12 A-code DC-in, 24 to 110 VDC and Internal PoE PSU	






*MRDC: M12 DC-in connector, railway SKU, DC voltage input

*TVDC: Terminal block DC-in connector, vehicle SKU, DC voltage input


*TMDC: Terminal block DC-in connector, marine SKU, DC voltage input

**Internal PoE SKU can be installed directly with VAM701/703/705/707 for PoE LAN ports.

Value-Added Modules (VAMs)

VAM100 (P/N: E277100100)	4 x Terminal block 4-wire isolated RS-232/422/485 COM Isolation voltage: 2 kV	
VAM102 (P/N: E277102100)	4 x Terminal block isolated CANBus 2.0A/B Isolation voltage: 2 kV	
VAM600 (P/N: E277600100)	2 x Full size Rev. 1.2 PCI Express Mini Card slot • 1 x USB/PCIe with SIM socket • 1 x USB with SIM socket 4 x Antenna opening	
VAM700/VAM701 (P/N: E277700100/E277701100) VAM702/VAM703 (P/N: E277702100/E277703100) VAM704/VAM705 (P/N: E277704100/E277705100) VAM706/VAM707 (P/N: E277706100/E277707100) VAM708 (P/N: E277708101)	VAM700/701(PoE): 4 x M12 A-code GbE (PoE optional*) VAM702/703(PoE): 4 x RJ-45 GbE (PoE optional*) VAM704/705(PoE): 4 x M12 D-code 10/100 Mbps Ethernet (PoE optional*) VAM706/707(PoE): 4 x M12 X-code GbE (PoE optional*) VAM708 : 4 x M12 A-code with LAN Bypass	
VAM900 (P/N: E277900100)	2 x Full-size Rev.1.2 PCI Express Mini Card slot • 2 x USB with SIM socket 1 x Half-size Rev.1.2 PCI Express Mini Card slot • 1 x PCIe 1 x Terminal block 4-wire isolated RS-232/422/485 COM (isolation Voltage: 2 kV) 1 x Terminal block isolated CANBus 2.0A/B (isolation Voltage: 2 kV) 1 x Terminal block isolated DIO 8-in/8-out (isolation Voltage: 1.5 kV)	

Optional

Anti-vibration Kit (P/N: 8816N5008A0E)	For in-vehicle/rolling stock which improves HDD stability in NVR applications * For more details, please search " Anti-vibration Kit" on Axiomtek website.		
Communication Modules	E29R318100	ACC318-501-203(LTE NL668-EAU)	
	E39P118113	EIO118-EAU-001 20C	
	E39P118114	EIO118-JP-001 20C	
AC to DC Adapters	509000001500	PWS FSP120-AAAN3 (9NA1206647) FSP 120W (wire type for TVDC/TMDC series)	
	509000002200	PWS 9NA0908344 FSP 90W (with M12 connector for MRDC series)	
Cable/Power Cords	590000065800	CBL SW_to_HS4P 300 mm	
	594B8120B30E	DC IN CABLE M12 FEMALE 5P 180 cm w/o ACC	
	59412042700E	LAN Cable M12(D) 4P / RJ-45 8P L=180 cm	
	594N3202730E	LAN Cable M12-A MALE 8P TO RJ-45	
	594B8152710E	LAN Cable M12-XCODE/RJ-45PLUG CAT6 180 cm	
	599000001100	P Cord YP12/YC12_CY-U0032 YUNG_LI 1830 mm	
	59906000010E	Power Cord YP-12/YC-12 (Japan)	
	59903000000E	Power Cord YP-22/YC-12 (Europe)	
	59904010000E	Power Cord/UK YP-61A/YC-12 L=1830 mm	

*Specifications and certifications may vary based on different requirements.

Packing List

4 x Thermal Pads for memory
4 x Foot pad
8 x Mylar for HDD or SSD
1 x Wall mount kit
8 x Screws for HDD/SSD
6 x Screws for mini card
1 x Grounding screw kit
2 x Keys for HDD/SSD tray lock
1 x Power input 3-pin terminal block connector (TVDC/TMDC only)

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, IGN on delay and IGN off delay

Dimensions

