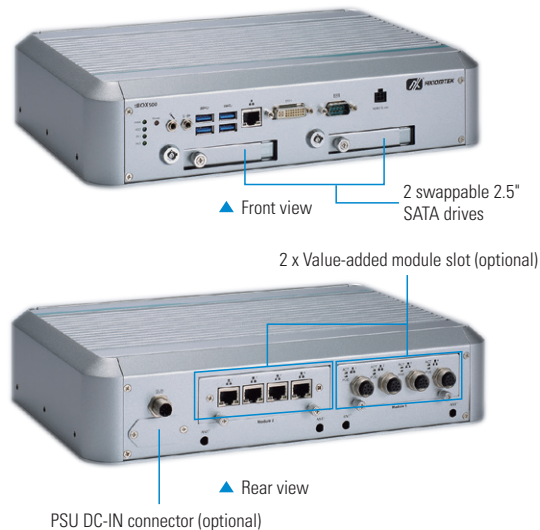


tBOX500-510-FL

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

Features

- CE (Class A), FCC, EN 50155, EN 50121, EN 45545-2, and IEC 60945 certified; E-Mark, ISO 7637-2, and DNV2.4 compliance
- 7th gen Intel® Core™ i7/i5/i3 & Celeron® processors (Kaby Lake)
- 2 value-added module slots for 9 types of value-added modules (COM/LAN/DIO/PoE/CAN/BNC)
- External PoE PSU (optional), up to 120W power supply
- Power Input:
 - 24 to 110 VDC for Railway version
 - 12/24 VDC for Vehicle version
 - 24 VDC for Marine version
- Intelligent solution of vehicle power management (ACC 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 Intel® Core™ i5-7300U 2C @ 2.6 GHz Intel® Core™ i3-7100U 2C @ 2.4 GHz Intel® Celeron® 3965U 2C @ 2.2 GHz
Chipset	SoC integrated
System Memory	2 x DDR4-1866/2133 SO-DIMM, up to 32GB
BIOS	AMI
System I/O Outlets	Rear <ul style="list-style-type: none"> 1 x M12 or Terminal block DC-in (optional) 1 x PoE power-in (Terminal block, optional) 2 x Value-added module slot
	Front <ul style="list-style-type: none"> 4 x LED indicator 2 x Audio (Mic-in/Line-out) 1 x RJ-45 10/100/1000 Mbps Ethernet (Intel® i210-IT) 4 x USB 3.0 1 x DVI-I 1 x DB9 serial console or RS-232/422/485 1 x Remote switch 1 x Reset bottom 2 x HDD/SSD tray
Watchdog Timer	255 levels, 1 to 255 sec.
Storage	2 x swappable 2.5" SATA drive (9.5 mm height) 1 x mSATA (use 1 PCI Express Mini Card slot)
RAID function	Intel® RAID 0/1
Expansion Interface	3 x Full-size PCI Express Mini Card slot 2 x SIM card slot 2 x Value-added module slot
System Indicator	1 x LED indicator for system power 1 x LED indicator for HDD activities 2 x Programmable
Power Supply	Railway ver. DC-input: 24 to 110 VDC (tolerance: 16.8 to 137.5 VDC) Vehicle ver. DC-input: 12/24 VDC (tolerance: 9 to 36 VDC, with ACC ignition) Marine ver. DC-input: 24 VDC (tolerance: 14 to 32 VDC)
PoE Power Supply	PoE power output maximum 120W (**/***) 15.4W/8 ports (802.3af), 30W/4 ports (802.3at) * To be used with PoE VAM (VAM701 & 703) ** Different system version has different PSU. *** 24V input Railway ver. is available (Marine by request)
Operating Temperature	-40°C to +70°C (-40°F to +158°F) with W.T. SSD -25°C to +55°C (-13°F to +131°F) with HDD -40°C to +60°C (-40°F to +140°F) with external PoE PSU










Humidity	10% to 95%, non-condensing
Vibration Endurance (operational)	3 Grms w/ SSD, 1.5 Grms w/ HDD (5 to 500Hz, X/Y/Z direction; random) EN 61373 cat. 1 class B IEC 60068-2-64 MIL-STD-810G, Method 514.6C, Procedure I, Category 4
Shock (non-operating test)	Shock optioning, 50 Grms, Half-sine 11 ms Duration (w/ SSD, according to IEC60068-2-27)
Dimensions	321 mm (12.64") (W) x 210.2 mm (8.28") (D) x 73.3 mm (2.89") (H)
Weight	3.5 kg (7.72 lb)/4.5 kg (11.02 lb)
Certifications	CE (Class A), FCC, EN 50155, EN 50121, EN 45545-2, and IEC 60945 certified; E-Mark, ISO 7637-2, and DNV2.4 compliance
EOS support	Windows® 10 64-bit, Linux

Ordering Information

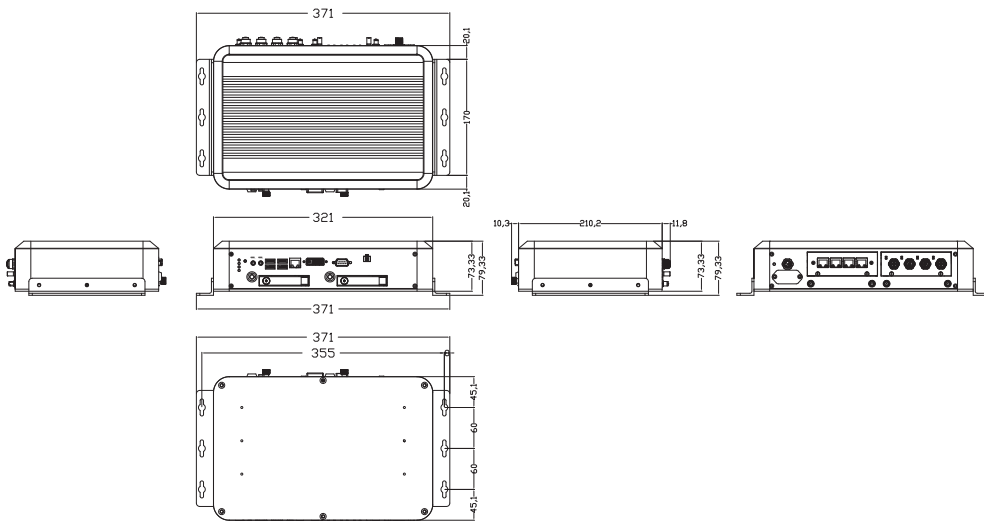
Standard	
tBOX500-510-FL-Celeron/i3/i5/i7-24-110MRDC (P/N: E26N500103) (P/N: E26N500102) (P/N: E26N500101) (P/N: E26N500100)	Fanless railway embedded system, Intel® Celeron® 3965U/ Core™ i3-7100U/i5-7300U/ i7-7600U processor, 4 USB 3.0, DVI-I, RJ-45 LAN, serial console, Mic-in & Line-out, two 2.5" SATA trays, M12 A-code 5P DC-in, and 24 to 110 VDC
tBOX500-510-FL-Celeron/i3/i5/i7-TVDC (P/N: E26N500104) (P/N: E26N500105) (P/N: E26N500106) (P/N: E26N500107)	Fanless vehicle embedded system, Intel® Celeron® 3965U/ Core™ i3-7100U/i5-7300U/ i7-7600U processor, 4 USB 3.0, DVI-I, RJ-45 LAN, serial console, Mic-in & Line-out, two 2.5" SATA trays, 9 to 36 VDC, TB 3P DC-in, and ACC ignition
tBOX500-510-FL-Celeron/i3/i5/i7-TMDC (By request)	Fanless marine embedded system, Intel® Celeron®3965U/ Core™ i3-7100U/i5-7300U/ i7-7600U processor, 4 USB 3.0, DVI-I, RJ-45 LAN, serial console, Mic-in & Line-out, two 2.5" SATA trays, TB 3P DC-in, and 14 to 32VDC

No supporting PoE/PoE+

Value-Added Modules (VAMs)

Item	Specifications	Image	
#1	4 x M12 A-code GbE (PoE optional) (P/N: E277700100) (PoE/PoE+, P/N: E277701100) *PSU is required if select VAM701		
		VAM700	VAM701 (PoE/PoE+)
#2	4 x RJ-45 A-code GbE (PoE optional) (P/N: E277702100) (PoE/PoE+, P/N: E277703100) *PSU is required if select VAM703		
		VAM702	VAM703 (PoE/PoE+)
#3	4 x 4-wire isolated RS-232/422/485 (P/N: E277100100)		
		VAM100	
#4	4 x isolated CANbus 2.0A/B (P/N: E277101100)		
		VAM101	
#5	8-in/8-out isolated DIO (P/N: E277200100)		
		VAM200	
#6	1 x PCI Express Mini Card slot + 1 x SIM Card Slot & 1 x PCI Express Mini Card Slot (USB only) + 1 x SIM Card Slot (P/N: E277600100)		
		VAM600	
#7	4 x Video & 1 x Audio-in +1 x PCI Express Mini Card Slot (USB only) + 1 x SIM Card Slot (P/N: E277400100)		
		VAM400	

Dimensions



Optional

2.5" SATA HDD/SSD	128GB or above
mSATA	64GB or above
DDR4 SO-DIMM	4GB to 16GB
3G/4G/GPS module	826N3230140E, 82606200410E, 826N5000100E
Wi-Fi/Bluetooth module	826N3230060E, 826N3230100E, 826N3230110E, 826N3230120E
DC in cable	594B8120B30E (M12, with ACC), 594B7100B00E (Wire, with ACC)
LAN cable	594N3202730E (M12-A male 8P to RJ-45)
Remote switch cable	594K3101020E
Value-added module (VAM)	VAM700, VAM701, VAM702, VAM703, VAM100, VAM101, VAM200, VAM600, VAM400
AC to DC adapter	50906D24000E (24V/120W, wire), 50966224010E (24V 90W, M12 Acode 5P)
Power cord	59903000000E (EU), 59906000010E (JP), 59902000000E (US), 59904000000E (UK)
Power supply unit (PSU)	E276120101 PSU120-259-RAILWAY PoE 120W DC/DC external PSU (EN 50155 compliance, 24V-in, 53V-out, available for tBOX500 24V railway version only) E276120102 PSU120-259-RAILWAY-48VDC PoE 120W DC/DC external PSU (EN 50155 compliance, 48V-in, 53V-out, available for tBOX500 48V railway version only) E276120103 PSU120-259-RAILWAY-96/110VDC PoE 120W DC/DC external PSU (EN 50155 compliance, 96/110V-in, 53V-out, available for tBOX500 96/110V railway version only)

*Specifications and certifications may vary based on different requirements.

Power Protection

- SCP (short circuit protection)
- OVP (over voltage protection)
- UVP (under voltage protection)
- RVP (reverse voltage protection)

Vehicle Version

ISO 7637-2 pulse 1/2/3/4

Setting for battery protection: Low voltage or very low voltage

Setting for ignition control: Low voltage counter, ACC-ON delay or shut down delay

Packing List

- 1 x Quick installation guide
- 1 x Driver CD
- 4 x Foot pad
- 1 x Screw pack
- 1 x Wall mount kit
- 4 x DRAM thermal pad
- 1 x Terminal block DC-in connector
- 4 x HDD mylar
- 2 x SATA drive key