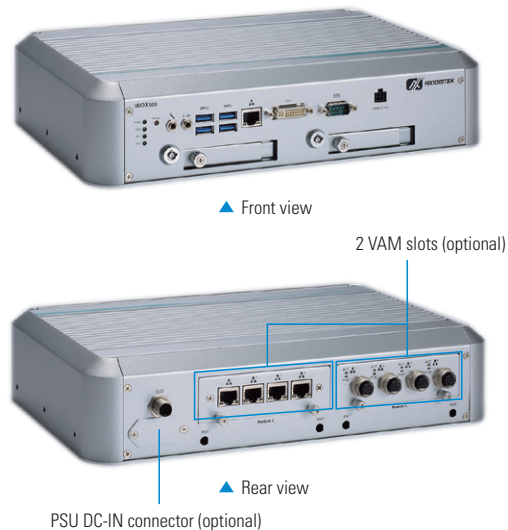


tBOX500-510-FL NEW

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

Features

- CE (Class A), EN 50155, EN 50121-3-2 certified; FCC, EN 45545-2, E-Mark, ISO 7637-2 DNV 2.4 and IEC 60945 compliance
- 7th gen Intel® Core™ i7/i5/i3 & Celeron® processors (Kaby Lake)
- 2 VAM slots, wide selections (COM/LAN/DIO/PoE/CAN/BNC)
- External PoE PSU (optional), up to 120W power supply
- Fanless design and suitability for wide operating temperatures from -40°C to +70°C
- Power Input:
 - 24 ~ 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 ~ 3.9 GHz Intel® Core™ i5-7300U 2C @ 2.6 ~ 3.5 GHz Intel® Core™ i3-7100U 2C @ 2.4 GHz Intel® Celeron® 3965U 2C @ 2.2 GHz				
System Memory	2 x DDR4-1866/2133 SO-DIMM, up to 32GB				
Chipset	SoC integrated				
BIOS	AMI				
System I/O Outlets	<table border="0"> <tr> <td>Rear Side</td> <td>1 x M12 or Terminal block DC-in (optional) 1 x PoE power-in (Terminal block, optional) 2 x modular IO slot</td> </tr> <tr> <td>Front Side</td> <td>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</td> </tr> </table>	Rear Side	1 x M12 or Terminal block DC-in (optional) 1 x PoE power-in (Terminal block, optional) 2 x modular IO slot	Front Side	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
Rear Side	1 x M12 or Terminal block DC-in (optional) 1 x PoE power-in (Terminal block, optional) 2 x modular IO slot				
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Watchdog Timer	255 levels, 1 ~ 255 sec.				
Storage	2 x swappable 2.5" 7/9.5 mm SATA drive 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 ~ 110VDC (tolerance: 16.8 ~ 137.5 VDC) Vehicle ver. DC-input: 12/24VDC (tolerance: 9 ~ 36VDC, w/ ACC ignition) Marine ver. DC-input: 24VDC (tolerance: 14 ~ 32VDC)				
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 ~ +70°C (-40°F ~ +158°F) with W.T. SSD -25°C ~ +55°C (-13°F ~ +131°F) with HDD				

Humidity	10% ~ 95%, non-condensing
Vibration Endurance (operational)	3 Grms w/ SSD, 1.5 Grms w/ HDD (5 ~ 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
Dimensions	321 mm (12.64") (W) x 210.2 mm (8.28") (D) x 73.3 mm (2.89") (H)
Shock (non-operating test)	Shock optioning, 50 Grms, Half-sine 11 ms Duration (w/ SSD, according to IEC60068-2-27)
Weight	3.5 kg (7.72 lb)/4.5 kg (11.02 lb)
Certificates	CE (Class A), FCC, EN 50155, EN 50121-3-2, E-Mark and ISO 7637-2 certified; EN 45545-2, DNV 2.4 and IEC 60945 compliance
EOS support	Windows® 10 64-bit, Linux










Ordering Information

Standard	
tBOX500-510-FL-Celeron-24-110MRDC (P/N: E26N500103)	Fanless railway embedded system, Intel® Celeron® 3965U 2.2 GHz 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 16.8-137.5VDC
tBOX500-510-FL-i3-24-110MRDC (P/N: E26N500102)	Fanless railway embedded system, Intel® Core™ i3-7100U 2.4 GHz 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 16.8-137.5VDC
tBOX500-510-FL-i5-24-110MRDC (P/N: E26N500101)	Fanless railway embedded system, Intel® Core™ i5-7300U 2.6 ~ 3.5 GHz 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 16.8-137.5VDC
tBOX500-510-FL-i7-24-110MRDC (P/N: E26N500100)	Fanless railway embedded system, Intel® Core™ i7-7600U 2.8 ~ 3.9 GHz 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 16.8-137.5VDC
tBOX500-510-FL-Celeron/i3/i5/i7-TVDC (By request)	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 ~ 36VDC, 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, 9 ~ 36VDC, TB 3P DC-in, and 14 ~ 32VDC

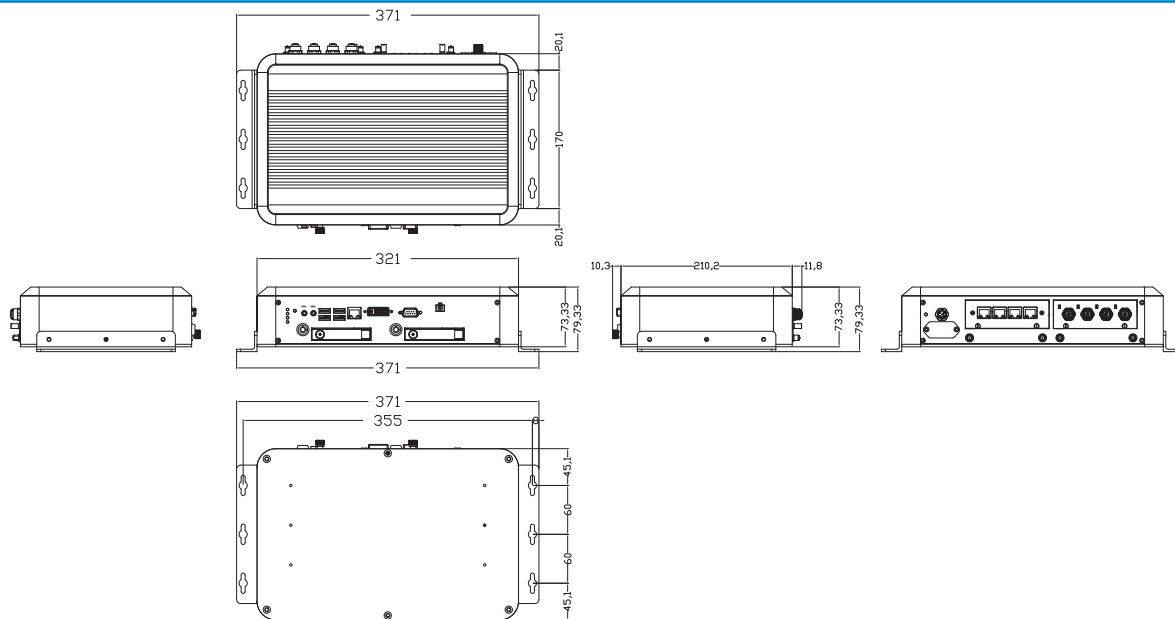
*MRDC: M12 DC-IN connector, Railway SKU, DC voltage input
*TVDC: Terminal Block DC-IN connector, Vehicle SKU, DC voltage input
*TMDC: Terminal Block DC-IN connector, Marine SKU, DC voltage input

Ordering Information

I/O Module Specification

Item	Spec		
#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 ~ 16GB
3G/4G/GPS module	826N3230140E, 82606200410E
Wi-Fi/Bluetooth module	826N3230060E, 826N3230100E, 826N3230110E, 826N3230120E
DC in cable	594B8120B30E (M12, w/o ACC), 594B7100B00E (Wire, w/ 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 PoE 120W DC/DC external PSU (EN 50155 compliance, 24V-in, 53V-out, available for tBOX500 24V railway ver. only)

*Specifications and certifications may vary according to various options.

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 DRAM L Type Bracket
1 x Terminal block DC In Connector
4 x HDD Mylar
2 x SATA Drive Key