

# tBOX300-510-FL NEW

Fanless Embedded System with 7th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor for Vehicle, Railway 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 compliant
- 7th gen Intel® Core™ & Celeron® processors (Kaby Lake)
- 1 value-added module slot and 9 types of value-added modules (COM/LAN/DIO/PoE/CAN/BNC)
- Supports Marvell Hardware RAID 0/1/10
- External PoE PSU (optional), up to 120W power supply
- Wide operating temperatures from -40°C to +70°C
- 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)
- 4 swappable 2.5" SATA drives



▲ Front view



1 x Value-added module slot (optional)

PSU DC-IN connector (optional)

▲ Rear view

## Specifications

Standard Color	Silver				
Construction	Aluminum extrusion and heavy-duty steel, IP30				
CPU	Intel® Core™ i7-7600U 2C @ 2.8 to 3.9 GHz Intel® Core™ i5-7300U 2C @ 2.6 to 3.5 GHz Intel® Core™ i3-7100U 2C @ 2.4 GHz Intel® Celeron® 3965U 2C @ 2.2GHz				
Chipset	SoC integrated				
System Memory	2 x DDR4 SO-DIMM slot, up to 32GB				
BIOS	AMI				
System I/O Outlet	<table border="0"> <tr> <td>Rear</td> <td> <ul style="list-style-type: none"> <li>1 x M12 or terminal block DC-in (optional)</li> <li>1 x PoE power-in (Terminal block, optional)</li> <li>1 x Value-added module slot</li> <li>4 x Antenna opening</li> <li>4 x RAID LED indicator</li> </ul> </td> </tr> <tr> <td>Front</td> <td> <ul style="list-style-type: none"> <li>4 x LED indicator</li> <li>2 x Audio (Mic-in/Line-out)</li> <li>1 x RJ-45 10/100/1000 Mbps Ethernet (Intel® i210-IT)</li> <li>4 x USB 3.0</li> <li>1 x DVI-I</li> <li>1 x DB9 serial console or RS-232/422/485</li> <li>1 x Remote switch</li> <li>1 x Reset bottom</li> <li>4 x HDD/SSD tray</li> </ul> </td> </tr> </table>	Rear	<ul style="list-style-type: none"> <li>1 x M12 or terminal block DC-in (optional)</li> <li>1 x PoE power-in (Terminal block, optional)</li> <li>1 x Value-added module slot</li> <li>4 x Antenna opening</li> <li>4 x RAID LED indicator</li> </ul>	Front	<ul style="list-style-type: none"> <li>4 x LED indicator</li> <li>2 x Audio (Mic-in/Line-out)</li> <li>1 x RJ-45 10/100/1000 Mbps Ethernet (Intel® i210-IT)</li> <li>4 x USB 3.0</li> <li>1 x DVI-I</li> <li>1 x DB9 serial console or RS-232/422/485</li> <li>1 x Remote switch</li> <li>1 x Reset bottom</li> <li>4 x HDD/SSD tray</li> </ul>
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Watchdog Timer	255 levels, 1 to 255 sec.				
Storage	4 x swappable 2.5" SATA drive (9.5 mm height) 1 x mSATA (use 1 PCI Express Mini Card slot)				
RAID Function	Marvell HW RAID 0/1/10				
Expansion Interface	3 x Full-size PCI Express Mini Card slot 2 x SIM card slot 1 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 version DC-input: 24 to 110 VDC (tolerance: 16.8 to 137.5 VDC) Vehicle version DC-input: 12/24 VDC (tolerance: 9 to 36 VDC, w/ ACC ignition) Marine version 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 W.T. HDD
Humidity	10% to 95%, non-condensing
Vibration Endurance (operational)	3 Grms with SSD, 1.5 Grms with 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 (with SSD, according to IEC60068-2-27)
Dimensions	321 mm (12.64") (W) x 210.2 mm (8.28") (D) x 105.33 mm (4.15") (H) 321 mm (12.64") (W) x 210.2 mm (8.28") (D) x 113.33 mm (4.46") (with wall mount)
Weight	4.5 kg (9.92 lb)/6 kg (13.23 lb)
Certifications	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 compliant
EOS support	Windows® 10 64-bit, Linux

## Ordering Information










Standard	
tBOX300-510-FL-Celeron/i3/i5/i7-24-110-MRDC	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, 4 2.5" SATA trays, M12 A-code 5P DC-in, and 16.8 to 137.5 VDC
tBOX300-510-FL-Celeron/i3/i5/i7-TVDC <b>No supporting PoE/PoE+</b>	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, 4 2.5" SATA trays, 9 to 36 VDC, TB 3P DC-in, and ACC ignition
tBOX300-510-FL-Celeron/i3/i5/i7-TMDC	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, 4 2.5" SATA trays, TB 3P DC-in, and 14 to 32 VDC

\*MRDC: M12 DC-IN connector, Railway SKU, DC voltage input

\*TVDC: Terminal Block DC-IN connector, Vehicle SKU, DC voltage input

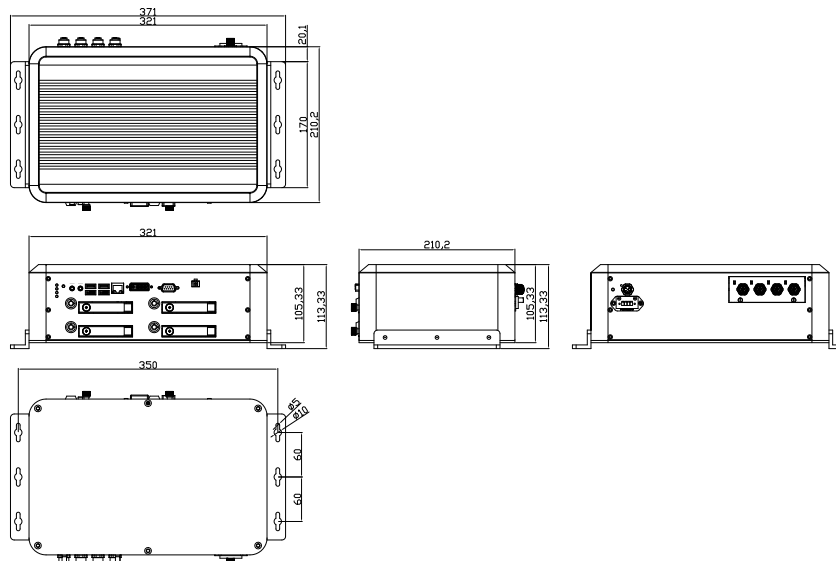
\*TMDC: Terminal Block DC-IN connector, Marine SKU, DC voltage input

### Value-added Modules (VAMs)

Item	Specifications		
#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	

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

### Dimensions



### Optional

2.5" SATA HDD/SSD  
mSATA  
3G/4G/GPS module  
Wi-Fi/Bluetooth module  
(120W external power supply for railway and marine application)