

tBOX300-510-FL

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

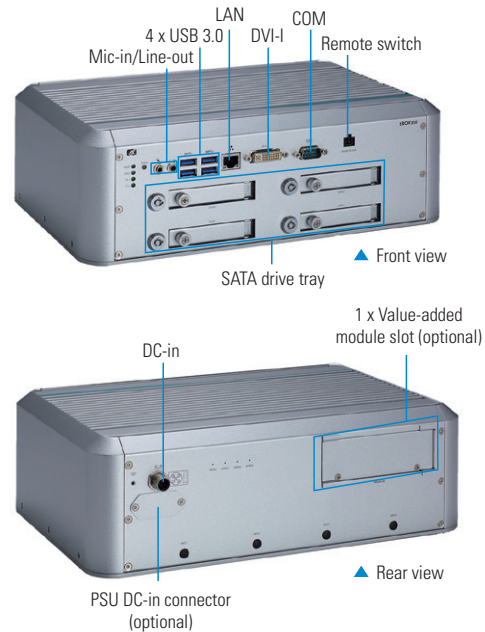
Features

- CE, LVD, FCC and EN 50155 certified; EN 45545-2 and IEC 60945 compliant
- 7th gen Intel® Core™ i7/i5/i3 & Celeron® processors (Kaby Lake)
- Fanless and wide operating temperatures from -25°C to +70°C
- Power Input:
 - 24 to 110 VDC for railway version
 - 24 VDC for marine version
- External PoE PSU (optional), up to 60W power supply
- Value-added modules available for various I/O requirements (COM/LAN/DIO/PoE/CAN/BNC)
- 4 swappable 2.5" SATA drives, Supports Marvell Hardware RAID 0/1/10



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 (optional)												
System I/O Outlet	<table> <tr> <td>Serial</td><td>1 x DB9 serial console or RS-232/422/485</td></tr> <tr> <td>Display</td><td>1 x DVI-I (up to 1920 x1200 @60Hz, 1 x VGA and 1 x DVI included)</td></tr> <tr> <td>Audio</td><td>1 x Mic-in, 1 x Line-out</td></tr> <tr> <td>Ethernet</td><td>1 x RJ-45 10/100/1000 Mbps Ethernet (Intel® i210-IT)</td></tr> <tr> <td>USB</td><td>4 x USB 3.0</td></tr> <tr> <td>Others</td><td>1 x Reset button 1 x Remote switch 4 x Antenna opening</td></tr> </table>	Serial	1 x DB9 serial console or RS-232/422/485	Display	1 x DVI-I (up to 1920 x1200 @60Hz, 1 x VGA and 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
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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 1 x Value-added module slot												
Storage	<table> <tr> <td>SATA Drive</td><td>4 x Swappable 2.5" SATA drive (9.5 mm height), Marvell HW RAID 0/1/10 supported</td></tr> <tr> <td>mSATA</td><td>1 x mSATA (occupied 1 x PCI Express Mini Card slot)</td></tr> </table>	SATA Drive	4 x Swappable 2.5" SATA drive (9.5 mm height), Marvell HW RAID 0/1/10 supported	mSATA	1 x mSATA (occupied 1 x PCI Express Mini Card slot)								
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Watchdog Timer	255 levels, 1 to 255 sec.												
Power	<table> <tr> <td>Power Supply</td><td>Railway: 1 x M12, 24 to 110 VDC Marine: 1 x terminal block, 24 VDC</td></tr> <tr> <td>Power Consumption</td><td>24V - 110V, 3.5A - 0.7A</td></tr> </table>	Power Supply	Railway: 1 x M12, 24 to 110 VDC Marine: 1 x terminal block, 24 VDC	Power Consumption	24V - 110V, 3.5A - 0.7A								
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PoE (PSE, Power Sourcing Equipment)	<table> <tr> <td>PoE Power Source</td><td>1 x Terminal block PoE power-in with PSU120-259 (optional, see Ordering info)</td></tr> <tr> <td>PoE Performance</td><td>Up to 4 x configurable M12/RJ-45 PoE output max. 60W supports PoE & PoE+ • PoE (802.3af 15.4W/port) • PoE+ (802.3at 30W/port) To be used with VAM PoE series and PSU120-259 series (optional, see Ordering info) </td></tr> </table>	PoE Power Source	1 x Terminal block PoE power-in with PSU120-259 (optional, see Ordering info)	PoE Performance	Up to 4 x configurable M12/RJ-45 PoE output max. 60W supports PoE & PoE+ • PoE (802.3af 15.4W/port) • PoE+ (802.3at 30W/port) To be used with VAM PoE series and PSU120-259 series (optional, see Ordering info)								
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System Indicator	1 x LED indicator for mSATA activity 1 x LED indicator for power 4 x LED indicator for SATA drive activity 2 x programmable						
Operating Temperature	-25°C to +70°C (-13°F to +158°F) with W.T. peripheral* -25°C to +60°C (-13°F to +140°F) with external PoE PSU & W.T. peripheral						
Humidity	0% to 95%, non-condensing						
Dimensions	321 mm (12.64") (W) x 210.2 mm (8.28") (D) x 105.33 mm (4.15") (H) (without wall mount)						
Mounting	Wall mount						
Weight (net/gross)	5.5 kg (12.13 lb)/6.7 kg (14.77 lb)						
Certifications	CE (Class A), LVD, FCC (Class A) and EN 50155 certified; EN 45545-2 and IEC 60945 compliant						
EMC	<table> <tr> <td>CE/FCC</td><td>EN 61000-6-4 (Class A), EN 61000-6-2, FCC Part 15 B (Class A)</td></tr> <tr> <td>EN 50155</td><td>EN 50121-3-2, IEC 62236-3-2</td></tr> <tr> <td>IEC 60945</td><td>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</td></tr> </table>	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
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LVD	EN 60950-1						
Vibration Endurance	3 Grms w/ SSD (5 to 500Hz, X/Y/Z direction; random, operating) 1 Grms w/ HDD (5 to 500Hz, X/Y/Z direction; random, operating) 2 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						
	<table> <tr> <td>EN 50155</td><td>EN (IEC) 61373 category 1 class B</td></tr> <tr> <td>IEC 60945</td><td>IEC 60068-2-6</td></tr> </table>	EN 50155	EN (IEC) 61373 category 1 class B	IEC 60945	IEC 60068-2-6		
EN 50155	EN (IEC) 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, Ubuntu 18.04						
Software Support	AMS.AXView						

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

Ordering Information

System	
tBOX300-510-FL-Celeron®/i3/i5/i7-24-110MRDC (P/N: E26N300100) for i7-7600U (P/N: E26N300101) for i5-7300U (P/N: E26N300102) for i3-7100U (P/N: E26N300103) for 3965U	Fanless railway embedded system, 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, four 2.5" SATA trays, M12 A-code DC-in, and 24 to 110 VDC
tBOX300-510-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, LAN, serial console or RS-232/422/485, Mic-in & Line-out, four 2.5" SATA trays, terminal block DC-in, and 14 to 32 VDC

*MRDC: M12 DC-in connector, railway SKU, DC voltage input
*TMDC: Terminal block DC-in connector, marine SKU, DC voltage input

Value-Added Modules (VAMs) & PSU120-259

VAM100 (P/N: E277100100)	4 x Terminal block 4-wire isolated RS-232/422/485 COM Isolation voltage: 2 kV	
VAM101 (P/N: E277101100)	4 x Terminal block isolated CANBus 2.0A/B Isolation voltage: 2 kV	
VAM200 (P/N: E277200100)	1 x Terminal block isolated DIO 8-in/8-out Isolation voltage: 2 kV	
VAM400 (P/N: E277400100)	4 x BNC video-in & 1 x BNC audio-in • Supports FPS: NTSC/PAL (up to 120fps @960/720 x 480/100fps @960/720 x 576), H.264 video recording 2 x Full size Rev. 1.2 PCI Express Mini Card slot • 1 x USB with SIM socket • 1 x USB/PCIe with SIM socket (occupied by 1 x Capture Card)	
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)	VAM700/701 (PoE): 4 x M12 A-code GbE (PoE optional*) VAM702/703 (PoE): 4 x RJ45 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*) *PSU120-259 is required if select VAM701/703/705/707	 
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)	
PSU120-259 series Railway-24VDC (P/N: E276120101) Railway-48VDC (P/N: E276120102) Railway-96/110VDC (P/N: E276120103)	Fanless IEC 60945 certified/EN 50155 compliant DC-DC adapter • Support 24/48/96/110V-in • Power output max. 120W • 40°C to +70°C (-40°F to +158°F)	

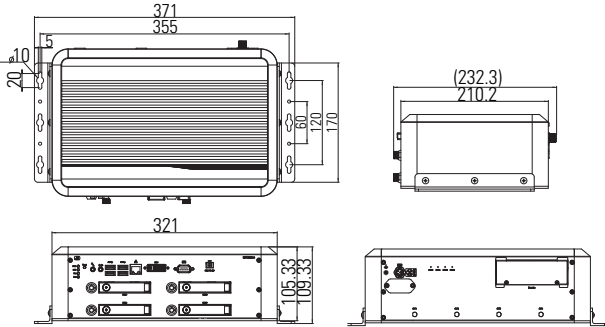
Optional	
Anti-vibration Kit (P/N: 8816N5008A0E)	For in-vehicle/rolling stock which improves HDD stability in NVR applications
Communication Modules	8816N3239A0E 3G UC20GKit for tBOX/UST (3G ANT) (E) 8816N3235A0E 3G/GPS UC20GKit tBOX/UST (3G/GPS ANT) (E) 8816N5003A0E AP12356 WT Wi-Fi kit for tBOX/UST SFP (E) 8816N5000A0E LTE SIM7100JC kit for tBOX, JPN SFP (E) 88160620BA0E LTE SIMCOM SIM7100 (EU) for tBOX/UST SFP (E)
AC to DC Adapter	50966224010E Aadpter 24V 90W, M12 A-code 5P FSP090AAAN3

*Specifications and certifications may vary based on different requirements.

Power Protection

OCP (over current protection)
OVP (over voltage protection)
UVP (under voltage protection)
RPP (reverse polarity protection)

Dimensions



Mouser Electronics

Authorized Distributor

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