

tBOX324-894-FL

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



▲ Front view



▲ Rear view

4 x M12/RJ-45
GbE LAN



Features

- CE, LVD, FCC, EN 50155, EN 45545-2, E-Mark, DNV 2.4 and IEC 60945 certified
- 7th gen Intel® Core™ i7/i5/i3 processor
- Fanless and wide operating temperatures from -40°C to +70°C
- 2 DDR4-1866/2133 SO-DIMM for up to 32GB of memory
- Typical 12/24/110 VDC power supply
- Intelligent solution of vehicle power management (Smart Ignition)
- 2 swappable 2.5" SATA drives
- 3 PCI Express Mini Card slots and 1 SIM card slot



EN 45545-2



AXView



Fanless



Wide Temperature



DDR4



EN 50155



E-Mark



DNV 2.4



IEC 60945

Specifications

Standard Color	Silver black																
Construction	Aluminum extrusion and heavy-duty steel, IP30																
CPU (supports Kaby Lake-U & Skylake-U platform)	Intel® Core™ i7-7600U 2.8 GHz* Intel® Core™ i5-7300U 2.6 GHz* Intel® Core™ i3-7100U 2.4 GHz* *2 Core @TDP: 15W																
Chipset	SoC integrated																
System Memory	2 x DDR4-1866/2133 SO-DIMM, up to 32GB																
BIOS	AMI																
System I/O Outlet	<table border="0"> <tr> <td>Serial</td> <td>1 x DB9 isolated RS-232/422/485 2 x Terminal block isolated RS-232/422/485 (isolation voltage: 2 kV)</td> </tr> <tr> <td>CANBus</td> <td>1 x DB9 isolated CANBus 2.0 A/B (isolation voltage: 2 kV)</td> </tr> <tr> <td>Display</td> <td>1 x DVI-I (up to 1920 x 1200 @60Hz 1 x VGA and 1 x DVI-D included) 1 x VGA</td> </tr> <tr> <td>Audio</td> <td>1 x Mic-in, 1 x Line-out</td> </tr> <tr> <td>Ethernet</td> <td>Railway: 4 x M12 A-coded 10/100/1000 Mbps Ethernet (Intel® I210-IT) Marine/Vehicle: 4 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>DIO</td> <td>1 x Terminal block isolated DIO 4-in/4-out (isolation voltage: 2 kV)</td> </tr> <tr> <td>Others</td> <td>1 x Reset button 1 x Remote switch 3 x Antenna opening</td> </tr> </table>	Serial	1 x DB9 isolated RS-232/422/485 2 x Terminal block isolated RS-232/422/485 (isolation voltage: 2 kV)	CANBus	1 x DB9 isolated CANBus 2.0 A/B (isolation voltage: 2 kV)	Display	1 x DVI-I (up to 1920 x 1200 @60Hz 1 x VGA and 1 x DVI-D included) 1 x VGA	Audio	1 x Mic-in, 1 x Line-out	Ethernet	Railway: 4 x M12 A-coded 10/100/1000 Mbps Ethernet (Intel® I210-IT) Marine/Vehicle: 4 x RJ-45 10/100/1000 Mbps Ethernet (Intel® I210-IT)	USB	4 x USB 3.0	DIO	1 x Terminal block isolated DIO 4-in/4-out (isolation voltage: 2 kV)	Others	1 x Reset button 1 x Remote switch 3 x Antenna opening
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Others	1 x Reset button 1 x Remote switch 3 x Antenna opening																
Expansion Interface	3 x Full-size Rev.1.2 PCI Express Mini Card slot: • 2 x USB/PCIe • 1 x USB/PCIe with SIM socket																
Storage	SATA Drive 2 x Swappable 2.5" SATA drive (9.5 mm height), Intel® RAID 0/1 supported CFast 1 x CFAST™																
Watchdog Timer	255 levels, 1 to 255 sec.																

Specifications




Power	Power Supply	Railway: 1 x M12, 24/110 VDC Vehicle: 1 x terminal block, 12/24 VDC with Smart Ignition Marine: 1 x terminal block, 24 VDC
System Indicator		4 x LED indicator for LAN activity 4 x LED indicator for LAN linked 1 x LED indicator for SATA drive activity 1 x LED indicator for power
Operating Temperature		-40°C to +70°C (-40°F to +158°F) with W.T. peripheral*
Humidity		0% to 95%, non-condensing
Dimensions		288.5 mm (11.36") (W) x 211.3 mm (8.32") (D) x 85.75 mm (3.38") (H) (without wall mount)
Mounting		Wall mount
Weight (net/gross)		5 kg (11.02 lb)/6.65 kg (14.66 lb)
Certifications		CE (Class A), FCC (Class A), EN 50155, EN 45545-2**, E-Mark, DNV 2.4 and IEC 60945 certified
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
	DNV 2.4	IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6
	IEC 60945	CISPR 16-1-1, CISPR 16-1-2, CISPR 16-1-4
	E-Mark	ECE-R10
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
	EN 50155	EN(IEC) 61373 category 1 class B
	DNV 2.4/IEC 60945	IEC 60068-2-6
Shock (operating)	EN 50155	EN (IEC) 61373 category 1 class B, half-sine pulse, 5g, 30ms (longitudinal direction), 3g, 30ms (vertical/transverse direction)
	DNV 2.4/IEC 60945	IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-30
EOS Support		Windows® 10 64-bit, Linux
Software Support		AXView

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

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

Ordering Information

Standard

tBOX324-894-FL-i5/i7-DIO-24MRDC-CAN (P/N: E26N324102) for i5-7300U	Fanless embedded system with 7th gen Intel® Core™ i7/i5/i3, 4 USB 3.0, DVI-I, 4 M12 GbE LANs, 3 COM, CAN, DIO, Mic-in & Line-out, two 2.5" SATA trays, M12 DC-in, and 24/110 VDC	
tBOX324-894-FL-i3/i7-DIO-110MRDC-CAN-G (P/N: E26N324121) for i7-7600U (P/N: E26N324119) for i3-7100U		
tBOX324-894-FL-i7-DIO-TVDC-CAN-GND (P/N: E26N324112) for i7-7600U	Fanless embedded system with 7th gen Intel® Core™ i7, 4 USB 3.0, DVI-I, 4 RJ-45 GbE LANs, 3 COM, CAN, DIO, Mic-in & Line-out, two 2.5" SATA trays, terminal block DC-in, Smart Ignition, and 12/24 VDC	
tBOX324-894-FL-i3/i5/i7-DIO-TMDC-CAN-GND (P/N: E26N324117) for i7-7600U (P/N: E26N324115) for i5-7300U (P/N: E26N324114) for i3-7100U	Fanless embedded system with 7th gen Intel® Core™ i7/i5/i3, 4 USB 3.0, DVI-I, 4 RJ-45 GbE LANs, 3 COM, CAN, DIO, Mic-in & Line-out, two 2.5" SATA trays, terminal block DC-in, and 24 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

*GND or G: with grounding opening & screw

Optional

Anti-vibration Kit (P/N: 8816N5008A0E)	For in-vehicle/rolling stock which improves HDD stability in NVR applications		
Communication Modules	886N32410A0E 881745001A0E 886N32310A0E 886N32311A0E 886N32312A0E	MCR8822CE-P WiFi KIT(20)for tBOX(E) GPS Kit M8N w/o adapter for tBOX/UST SFP (E) LTE LE910C4-AP KIT(20)for tBOX(E) LTE LE910C4-EU KIT(20)for tBOX(E) LTE LE910C4-NF KIT(20)for tBOX(E)	
AC to DC Adapter	509000001500 509000002200	PWS FSP120-AAAN3(9NA1206647) FSP 120W PWS 9NA0908344 FSP 90W	
Cable/Power Cord	594B8120B30E 594N3202730E 599000001100 59906000010E 59903000000E 59905000000E 59904010000E	DC-in cable M12 female 5P 180cm w/o ACC LAN cable M12-A male 8P to RJ-45 Power cord YP-12/YC-12_CY-U0032 YUNG_LI 1830mm Power cord YP-12/YC-12 (Japan) Power cord YP-22/YC-12 (Europe) Power cord YP-35/YC-12 (Australia) Power cord/UK YP-61A/YC-12 L=1830mm	

*Specifications and certifications may vary based on different requirements.

Packing List

- 1 x Wall mount bracket
- 2 x SATA drive key
- 4 x DRAM thermal pad
- 4 x Foot pad
- 1 x Power DC-in terminal block 3-pin connector (for TMDC and TVDC series only)
- 1 x 12-pin terminal block connector for DIO
- 2 x 10-pin terminal block connector for COM

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: the 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

