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

▲ Front view

▲ Rear view

Fanless | Ext. Temp | DDR4 | EN 50155 | IEC 60945 | EN 45545-2 | AMS.AXView

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	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
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	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)
Watchdog Timer	255 levels, 1 to 255 sec.	
Power	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
PoE (PSE, Power Sourcing Equipment)	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)

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	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
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-VL Category 4 compliant	
	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.

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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 +60°C (-40°F to +140°F)

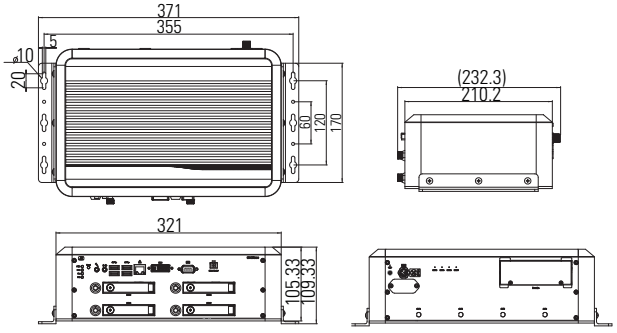
Optional		
Anti-vibration Kit (P/N: 8816N5008A0E)	For in-vehicle/rolling stock which improves HDD stability in NVR applications	
Communication Modules	8816N3239A0E	3G UC20GKit for tBOX/UST (3G ANT) (E)
	8816N3235A0E	3G/GPS UC20GKit tBOX/UST (3G/GPS ANT) (E)
	8816N5003A0E	AP12356 WT Wi-Fi kit for tBOX/UST SFP (E)
	8816N5002A0E	LTE MC7455(US) kit for tBOX/UST SFP (E)
	8816N5000A0E	LTE SIM7100JC kit for tBOX, JPN SFP (E)
	8816N5006A0E	LTE+GPS SIM7100 (JPE) kit tBOX (30) SFP (E)
	88160620BA0E	LTE SIMCOM SIM7100 (EU) for tBOX/UST SFP (E)
	881745000A0E	LTE+GPS SIM7100EU kit for tBOX/UST SFP (E)
	8816N5004A0E	LTE+GPS SIM7100C (TW) kit tBOX (30) 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



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