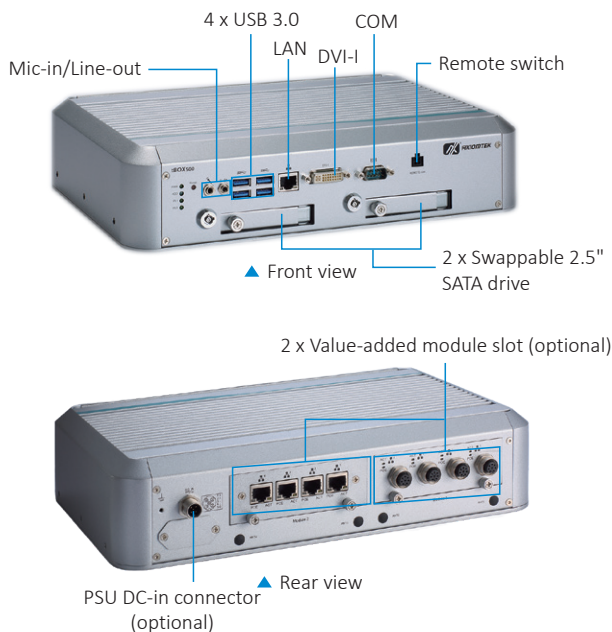


tBOX500-510-FL

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



Features

- CE, LVD, FCC, EN 50155, EN 45545-2, and IEC 60945 certified; ISO 7637-2 compliant
- 7th gen Intel® Core™ i7/i5/i3 or Celeron® processor
- Power supply:
 - 24 to 110 VDC for Railway version
 - 12/24 VDC for Vehicle version
 - 24 VDC for Marine version
- PoE PSU (optional), up to 120W power supply
- Value-added modules available for various I/O requirements (COM/LAN/DIO/PoE/CAN/BNC)
- Intelligent solution of vehicle power management (Smart 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 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 |
| System I/O Outlets | Serial 1 x DB9 serial console or RS-232/422/485 Display 1 x DVI-I (up to 1920 x1200 @60Hz, 1 x VGA & 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 2 x Value-added module slot |
| Storage | SATA Drive 2 x Swappable 2.5" SATA drive (9.5 mm height), Intel® RAID 0/1 supported mSATA 1 x mSATA (occupied 1 x PCI Express Mini Card slot) |
| Watchdog Timer | 255 levels, 1 to 255 sec. |

Specifications

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|-------------------------------------|--|---|
| Power | Power Supply | Railway: 1 x M12, 24 to 110 VDC Vehicle: 1 x terminal block, 12/24 VDC with Smart Ignition Marine: 1 x terminal block, 24 VDC |
| | Power Consumption | 24V - 110V, 3A - 0.6A 24V - 110V, 5.5A - 1.6A with internal PoE PSU |
| PoE (PSE, Power Sourcing Equipment) | External PoE Power Source | 1 x Terminal block PoE power-in with PSU120-259 (optional, see ordering info) |
| | PoE Performance | Up to 8 configurable M12/RJ-45 PoE output max. 120W supports PoE & PoE+ <ul style="list-style-type: none"> • PoE (802.3af 15.4W/port) • PoE+ (802.3at 30W/port) To be used with VAM PoE * Internal PoE Power * External PoE Power with PSU120-259 (optional, see ordering info) |
| System Indicator | 1 x LED indicator for power 1 x LED indicator for SATA drive activity 2 x Programmable | |
| Operating Temperature | -40°C to +70°C (-40°F to +158°F) with W.T. peripheral* -40°C to +60°C (-40°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 73.3 mm (2.89") (H) (without wall mount) | |
| Mounting | Wall mount | |
| Weight | 3.5 kg (7.72 lb)/5.1 kg (11.24 lb) | |
| Certifications | CE (Class A), LVD, FCC (Class A), EN 50155**, EN 45545-2***, and IEC 60945 certified; ISO 7637-2 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) 1.5 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 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, Linux | |
| Software Support | AXView | |





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

** Internal PoE Series is compliant with EN 50155

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

Ordering Information

System

| | | |
|---|---|---|
| tBOX500-510-FL-Celeron/i3/i5/i7-24-110MRDC (P/N: E26N500100) for i7-7600U (P/N: E26N500101) for i5-7300U (P/N: E26N500102) for i3-7100U (P/N: E26N500103) for 3965U | Fanless railway embedded system with 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, two 2.5" SATA trays, M12 A-code DC-in, and 24 to 110 VDC |  |
| tBOX500-510-FL-Celeron/i3/i5/i7-TVDC (P/N: E26N500104) for i7-7600U (P/N: E26N500105) for i5-7300U (P/N: E26N500106) for i3-7100U (P/N: E26N500107) for 3965U | Fanless vehicle embedded system with 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, two 2.5" SATA trays, terminal block DC-in, and Smart Ignition *Not supporting PoE function |  |
| tBOX500-510-FL-Celeron/i3/i5/i7-TMDC (P/N: E26N500108) for i7-7600U (P/N: E26N500109) for i5-7300U (P/N: E26N500110) for i3-7100U (P/N: E26N500111) for 3965U | Fanless marine embedded system with 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, two 2.5" SATA trays, and terminal block DC-in |  |
| tBOX500-510-FL-i5-POE-24-110MRDC (P/N: E26N500115)** | Fanless railway embedded system with Intel® Core™ i5-7300U processor, 4 USB 3.0, DVI-I, LAN, serial console or RS-232/422/485, Mic-in & Line-out, two 2.5" SATA trays, M12 A-code DC-in, 24 to 110 VDC and Internal PoE PSU |  |







*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


**Internal PoE SKU, please refer to the user's manual for more information.

Value-Added Modules (VAMs) & PSU120-259

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|--|---|---|
| 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) VAM708 (P/N: E277708101) | VAM700/701(PoE): 4 x M12 A-code GbE (PoE optional*) VAM702/703(PoE): 4 x RJ-45 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*) VAM708 : 4 x M12 A-code w/ LAN Bypass *PSU120-259 is required if select VAM701/703/705/707 |  |

| | | |
|--|---|---|
| VAM900 (P/N: E277900100) | <ul style="list-style-type: none"> 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) Marine-24VDC (P/N: E276120104) | <ul style="list-style-type: none"> Fanless IEC 60945 certified/EN 50155 compliant DC-DC adapter • Supports 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 | <ul style="list-style-type: none"> 8816N3239A0E 8816N3235A0E 886N50014A0E 886N50010A0E 886N50013A0E 886N50011A0E 886N50012A0E 509000001500 50966224010E | <ul style="list-style-type: none"> 3G UC20GKit for tBOX/UST (3G ANT) (E) 3G/GPS UC20GKit tBOX/UST (3G/GPS ANT) (E) MCR8822CE-P WiFi KIT(30)for tBOX(E) LTE LE910C4-AP KIT(30)for tBOX(E) LTE LE910C4-AP w/GPS(30) for tBOX(E) LTE LE910C4-EU KIT(30)for tBOX(E) LTE LE910C4-NF KIT(30)for tBOX(E) PWS FSP120-AAAN3(9NA1206647) FSP 120W Adapter 24V 90W, M12 A-code 5P FSP090AAAN3 | |
| AC to DC Adapter | | | |

*Specifications and certifications may vary based on different requirements.

Power Protection

OCP (over current protection)

OVP (over voltage protection)

UVP (under voltage protection)

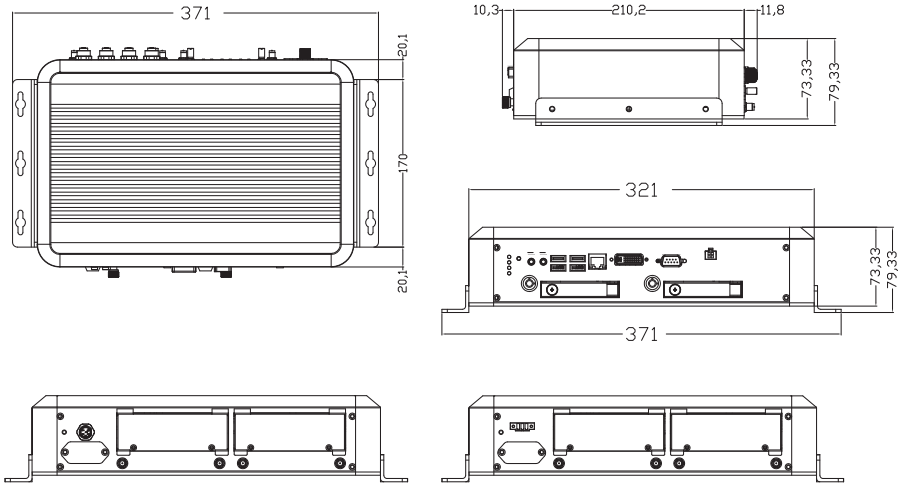
RPP (reverse polarity protection)

ISO 7637-2 pulse 1, 2a, 2b, 3a, 3b, 4 (vehicle version)

Setting for in-vehicle battery protection: 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, ACC-ON delay and shut down delay

Dimensions



#M12 DC-in
E26N500100

#Terminal block DC-in
E26N500104