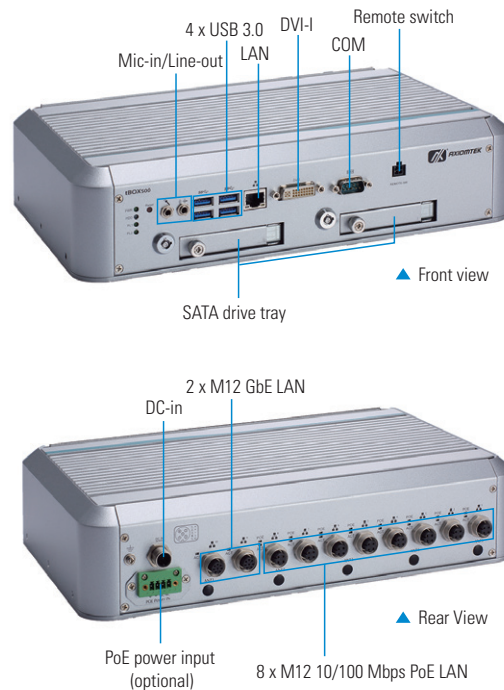


tBOX400-510-FL

Fanless Embedded System with 7th Gen Intel® Core™ i7/i5/i3 & Celeron® Processors, Built-in Layer 2 Managed PoE Switch for Railway PC

Features

- Built-in layer 2 managed PoE switch
- 7th gen Intel® Core™ i7/i5/i3 & Celeron® processors (Kaby Lake)
- Fanless and wide operating temperature from -40°C to 70°C
- CE, LVD, FCC, EN 50155 and EN 45545-2 certified
- Power supply: 24 to 110 VDC for Railway version
- PoE power budget up to 120W by 8 ports
- Optimized network performance with QoS, VLAN and PoE scheduling, etc.



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 slot, up to 32G
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 8 x M12 D-coded 10/100 Mbps Ethernet 2 x M12 A-coded 10/100/1000 Mbps 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 5 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
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.
Power	Power Supply Railway: 1 x M12, 24 to 110 VDC Power 24V - 110V, 3.5A - 0.7A Consumption

PoE (PSE, Power Sourcing Equipment)	PoE Power Source 1 x M12 PoE power-in with PSU120-259 (optional, see ordering info) PoE Performance (Layer 2 Managed PoE Switch) 8 x configurable M12 D-coded PoE output max. 120W supports PoE & PoE+ • PoE (802.3af 15.4W/port) • PoE+ (802.3at 30W/port) To be used with PSU120-259 series (optional, see ordering info)
System Indicator	1 x LED indicator for SATA drive activity 1 x LED indicator for power 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 (net/gross)	3.5 kg (7.72 lb)/5.17 kg (11.40 lb)
Certifications	CE (Class A), LVD and FCC (Class A), EN 50155, EN 45545-2 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
LVD	EN 62368-1
Vibration Endurance	3 Grms w/ SSD (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
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.

Ethernet Software Features

Management	Interface: CLI, Telnet and Web Browser, SNMP v1/v2c/v3 Firmware and configuration upgrade and backup via TFTP Supports DHCP Server/Client RMON (Remote monitoring): group 1, 2, 3, 9 Port mirroring: TX/RX and both NTP (Network Time Protocol) time synchronization IEEE 802.1ab LLDP (Link Layer Discovery Protocol)
Security	MAC address filtering Enable/disable port Storm control (broadcast and multicast types) IEEE 802.1x LAN access control Remote authentication through RADIUS SSH for CLI and Telnet security SSL for web security System log (remote/local) ACL
Quality of Service (QoS)	Priority Queues: 4 queues per port Traffic classification based on IEEE 802.1p CoS, DSCP, WRR (weighted round robin) and strict mode Rate Limiting (ingress/egress)
Network Redundant	IEEE 802.1D Spanning Tree Protocol (STP) IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) IEEE 802.1s Multiple Spanning Tree Protocol (MSTP) EtherWAN's Alpha-Ring network fault recovery (<15ms)
Software	Auto-negotiation for port speed and duplex mode: Flow Control IEEE 802.3x full duplex mode Back-Pressure half duplex mode VLANs: IEEE 802.1Q Tag VLANs (128 groups, 4096 VID) GVRP (GARP VLAN Registration Protocol) GMRP (GARP Multicast Registration Protocol) Link Aggregation: Static Trunk (4 groups, support MAC base) IEEE 802.3ad Link Aggregation Control Protocol IGMP Snooping: IGMP snooping v1/v2/v3

Ordering Information

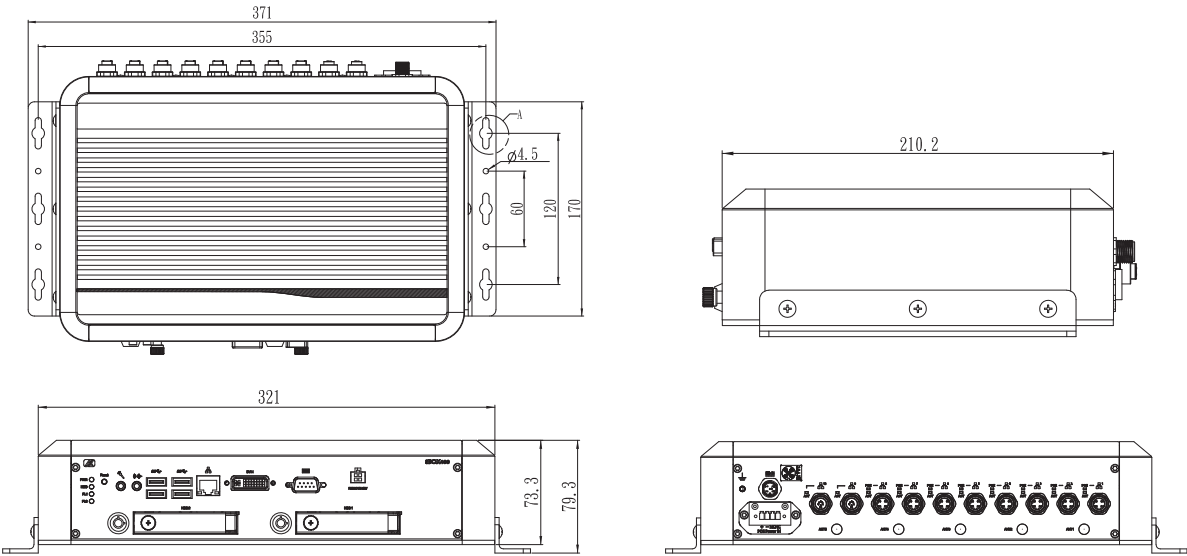
System	
tBOX400-510-FL-Celeron/i3/i5/i7-24-110MRDC (P/N: E26N400100) for i7-7600U (P/N: E26N400101) for i5-7300U (P/N: E26N400102) for i3-7100U (P/N: E26N400103) for 3965U	Fanless railway embedded system, layer 2 managed PoE switch, Intel® Celeron® 3965U/Core™ i3-7100U/i5-7300U/ i7-7600U processor, 4 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
*MRDC: M12 DC-IN connector, Railway SKU, DC voltage input	
PSU120-259	
Railway-24VDC (P/N: E276120105) Railway-48VDC (P/N: E276120106) Railway-96/110VDC (P/N: E276120107)	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) • For tBOX400
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) 8816N5004A0E LTE SIM7100C (TW) kit for tBOX SFP (E) 88160620BA0E LTE SIMCOM SIM7100 (EU) for tBOX/UST SFP (E)
AC to DC Adapter	50966224010E Adapter 24V 90W, M12 A-code 5P FSP090AAAN3

*Specifications and certifications may vary based on different requirements.

Power Protection

SCP (short circuit protection)
OVP (over voltage protection)
UVP (under voltage protection)
RVP (reverse voltage protection)

Dimensions



Mouser Electronics

Authorized Distributor

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[tBOX400-510-FL-Cel-POE-24-110-MRDC](#) [tBOX400-510-FL-i3-POE-24-110-MRDC](#) [tBOX400-510-FL-i5-POE-24-110-MRDC](#) [tBOX400-510-FL-i7-POE-24-110-MRDC](#)