

tBOX324-894-FL

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

Features

- CE (Class A), EN 50155, EN 50121-3-2, E-Mark, ISO 7637-2, IEC 60945 and DNV 2.4 certified
- 7th gen Intel® Core™ i7/i5/i3 & Celeron® processors
- 2 DDR4-1866/2133 SO-DIMM up to 32GB
- Typical 12/24/110 VDC power input
- Wide operating temperatures from -40°C to +70°C
- Intelligent solution of vehicle power management (ACC ignition)
- 2 swappable 2.5" SATA drives
- 3 PCI Express Mini Card slots and 1 SIM card slot



Specifications

Standard Color	Silver black				
Construction	Aluminum extrusion and heavy-duty steel, IP40				
CPU	Intel® Core™ i7-7600U 2C @ 2.8 to 3.9 GHz Intel® Core™ i5-7300U 2C @ 2.6 to 3.5 GHz Intel® Core™ i3-7100U 2C @ 2.4 GHz Intel® Celeron® 3965U 2C @ 2.2 GHz				
System Memory	2 x DDR4-1866/2133 SO-DIMM, up to 32GB				
Chipset	SoC integrated				
BIOS	AMI				
System I/O Outlet	<table><tr><td>Rear</td><td>1 x M12 (5P)/TB (3P) power connector 1 x Isolated RS-232/422/485 (DB9) 1 x Isolated CANbus 2.0 A/B (DB9) or RS-232/422/485 (optional) 2 x Isolated RS-232/422/485 (TB 2 x 5P) 1 x 4-in/4-out isolated DIO (TB 2 x 6P) 1 x DVI-I (supports DVI & VGA) 1 x VGA 1 x Remote switch 2 x Audio (Mic-in & Line-out) 4 x RJ-45/M12 A-coded GbE LAN 3 x Antenna opening</td></tr><tr><td>Front</td><td>8 x LED indicator for LAN link/activity 1 x LED indicator for SATA drive activity 1 x LED indicator for power 4 x USB 3.0 1 x CFast™ 1 x Reset button 2 x 2.5" SATA drive tray</td></tr></table>	Rear	1 x M12 (5P)/TB (3P) power connector 1 x Isolated RS-232/422/485 (DB9) 1 x Isolated CANbus 2.0 A/B (DB9) or RS-232/422/485 (optional) 2 x Isolated RS-232/422/485 (TB 2 x 5P) 1 x 4-in/4-out isolated DIO (TB 2 x 6P) 1 x DVI-I (supports DVI & VGA) 1 x VGA 1 x Remote switch 2 x Audio (Mic-in & Line-out) 4 x RJ-45/M12 A-coded GbE LAN 3 x Antenna opening	Front	8 x LED indicator for LAN link/activity 1 x LED indicator for SATA drive activity 1 x LED indicator for power 4 x USB 3.0 1 x CFast™ 1 x Reset button 2 x 2.5" SATA drive tray
Rear	1 x M12 (5P)/TB (3P) power connector 1 x Isolated RS-232/422/485 (DB9) 1 x Isolated CANbus 2.0 A/B (DB9) or RS-232/422/485 (optional) 2 x Isolated RS-232/422/485 (TB 2 x 5P) 1 x 4-in/4-out isolated DIO (TB 2 x 6P) 1 x DVI-I (supports DVI & VGA) 1 x VGA 1 x Remote switch 2 x Audio (Mic-in & Line-out) 4 x RJ-45/M12 A-coded GbE LAN 3 x Antenna opening				
Front	8 x LED indicator for LAN link/activity 1 x LED indicator for SATA drive activity 1 x LED indicator for power 4 x USB 3.0 1 x CFast™ 1 x Reset button 2 x 2.5" SATA drive tray				
Watchdog Timer	255 levels, 1 to 255 sec.				
Storage	2 x 2.5" SATA drive (9.5 mm height) 1 x CFast™				
RAID function	Intel® RAID Q/1				
Expansion Interface	3 x Full-size PCI Express Mini Card slot 1 x SIM card slot				
System Indicator	1 x LED indicator for system power 1 x LED indicator for SATA drive active 4 x LED indicator for LAN activated 4 x LED indicator for LAN linked				
Power Supply	Railway version DC-input: 24/110 VDC (tolerance: 14 to 32 VDC/77 to 137.5 VDC) Vehicle version DC-input: 12/24 VDC (tolerance: 9 to 36 VDC, with ACC ignition) Marine version DC-input: 24 VDC (tolerance: 14 to 32VDC)				
Operating Temperature	-40°C to +70°C (-40°F to +158°F) with W.T. SSD 0°C to +55°C (+32°F to +131°F) with HDD				
Humidity	10% to 95%, non-condensing				
Vibration Endurance	3 Gms w/ SSD, 1 Gms w/ HDD (5 to 500Hz, X/Y/Z direction; random) EN 61373 cat. 1 class B IEC 60068-2-64 MIL-STD-810G, Method 514.6C, Procedure I, Category 4				



▲ Front view



▲ Rear view

Shock (non-operating test)	Shock optioning, 50 Grms, Half-sine 11 ms Duration (w/ SSD, according to IEC60068-2-27)
Dimensions	288.5 mm (11.36") (W) x 211.3 mm (8.32") (D) x 85.75 mm (3.38") (H)
Weight	5 kg (11 lb)/6.5 kg (14.33 lb)
Certifications	CE (Class A), FCC, EN 50155, EN 50121-3-2, E-Mark, ISO 7637-2, DNV 2.4, IEC 60945 and EN 45545-2 certified
EOS support	Windows® 10 64-bit, Linux

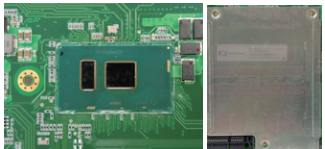
Ordering Information

Standard	
tBOX324-894-FL-Celeron-DIO-24MRDC-CAN (P/N: E26N324100)	Fanless railway embedded system with Intel® Celeron® 3965U 2.2 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (M12), 3 COM, CAN, DIO, two 2.5" SATA trays, M12 A-code 5P DC-in, and 14 to 32 VDC
tBOX324-894-FL-i3-DIO-24MRDC-CAN (P/N: E26N324101)	Fanless railway embedded system with Intel® Core™ i3-7100U 2.4 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (M12), 3 COM, CAN, DIO, two 2.5" SATA trays, M12 A-code 5P DC-in, and 14 to 32 VDC
tBOX324-894-FL-i5-DIO-24MRDC-CAN (P/N: E26N324102)	Fanless railway embedded system with Intel® Core™ i5-7300U 2.6 to 3.5 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (M12), 3 COM, CAN, DIO, two 2.5" SATA trays, M12 A-code 5P DC-in, and 14 to 32 VDC
tBOX324-894-FL-i7-DIO-24MRDC-CAN (P/N: E26N324103)	Fanless railway embedded system with Intel® Core™ i7-7600U 2.8 to 3.9 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (M12), 3 COM, CAN, DIO, two 2.5" SATA trays, M12 A-code 5P DC-in, and 14 to 32 VDC
tBOX324-894-FL-Celeron-DIO-TMDC-CAN-GND (P/N: E26N324113)	Fanless marine embedded system with Intel® Celeron® 3965U 2.2 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (RJ-45), 3 COM, CAN, DIO, two 2.5" SATA trays, TB 3P DC-in with GND, 14 to 32 VDC
tBOX324-894-FL-i3-DIO-TMDC-CAN-GND (P/N: E26N324114)	Fanless marine embedded system with Intel® Core™ i3-7100U 3965U 2.2 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (RJ-45), 3 COM, CAN, DIO, two 2.5" SATA trays, TB 3P DC-in with GND, 14 to 32 VDC
tBOX324-894-FL-i5-DIO-TMDC-CAN-GND (P/N: E26N324115)	Fanless marine embedded system with Intel® Core™ i5-7300U 3965U 2.2 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (RJ-45), 3 COM, CAN, DIO, two 2.5" SATA trays, TB 3P DC-in with GND, 14 to 32 VDC
tBOX324-894-FL-i7-DIO-TMDC-CAN-GND (P/N: E26N324117)	Fanless marine embedded system with Intel® Core™ i7-7600U 3965U 2.2 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (RJ-45), 3 COM, CAN, DIO, two 2.5" SATA trays, TB 3P DC-in with GND, 14 to 32 VDC
tBOX324-894-FL-Celeron-DIO-TVDC-CAN-GND (P/N: E26N324109)	Fanless vehicle embedded system with Intel® Celeron® 3965U 2.2 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (RJ-45), 3 COM, CAN, DIO, two 2.5" SATA trays, 9 to 36 VDC, TB 3P DC-in, and ACC ignition
tBOX324-894-FL-i3-DIO-TVDC-CAN-GND (P/N: E26N324110)	Fanless vehicle embedded system with Intel® Core™ i3-7100U 2.4 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (RJ-45), 3 COM, CAN, DIO, two 2.5" SATA trays, 9 to 36 VDC, TB 3P DC-in, and ACC ignition
tBOX324-894-FL-i5-DIO-TVDC-CAN-GND (P/N: E26N324111)	Fanless vehicle embedded system with Intel® Core™ i5-7300U 2.6 to 3.5 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (RJ-45), 3 COM, CAN, DIO, two 2.5" SATA trays, 9 to 36 VDC, TB 3P DC-in, and ACC ignition
tBOX324-894-FL-i7-DIO-TVDC-CAN-GND (P/N: E26N324112)	Fanless vehicle embedded system with Intel® Core™ i7-7600U 2.8 to 3.9 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (RJ-45), 3 COM, CAN, DIO, 9 to 36 VDC, two 2.5" SATA trays, TB 3P DC-in, and ACC ignition

tBOX324-894-FL-Celeron-DIO-110MRDC-CAN-GND (P/N: E26N324118)	Fanless railway embedded system with Intel® Celeron® 3965U 2.2 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (M12), 3 COM, CAN, DIO, two 2.5" SATA trays, M12 A-code 5P DC-in with GND, and 77 to 137.5 VDC
tBOX324-894-FL-i3-DIO-110MRDC-CAN-GND (P/N: E26N324119)	Fanless railway embedded system with Intel® Core™ i3-7100U 2.4 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (M12), 3 COM, CAN, DIO, two 2.5" SATA trays, M12 A-code 5P DC-in with GND, and 77 to 137.5 VDC
tBOX324-894-FL-i5-DIO-110MRDC-CAN-GND (P/N: E26N324120)	Fanless railway grade embedded system with Intel® Core™ i5-7300U 2.6 to 3.5 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (M12), 3 COM, CAN, DIO, two 2.5" SATA trays, M12 A-code 5P DC-in with GND, and 77 to 137.5 VDC
tBOX324-894-FL-i7-DIO-110MRDC-CAN-GND (P/N: E26N324121)	Fanless railway embedded system with Intel® Core™ i7-7600U 2.8 to 3.9 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (M12), 3 COM, CAN, DIO, two 2.5" SATA trays, M12 A-code 5P DC-in with GND, and 77 to 137.5 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

Expansion & Installation



Onboard processor design and unique thermal/fastener plate on the system memory for great reliability



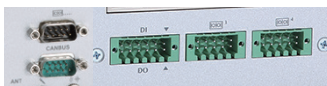
2 swappable and lockable 2.5" SATA3 HDD/SSD and 1 CFastTM



Optional M12 connectors for DC-in and LAN jacks



DVI-I and VGA ports



1 COM (DB9), 1 CANbus/COM (DB9), 1 DIO (TB) and 2 COM (TB)

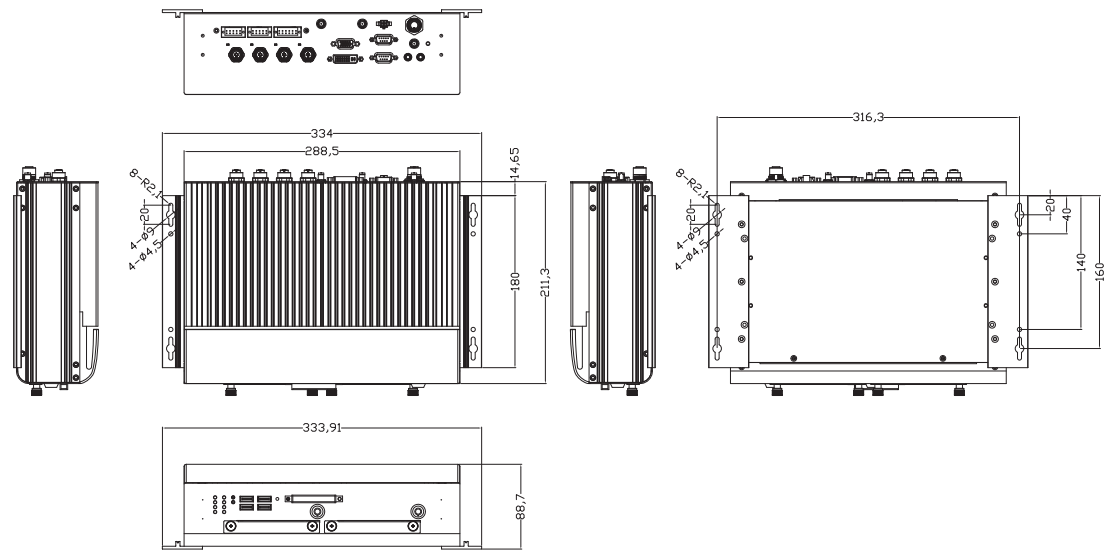


3 Full-size PCI Express Mini Card slots and 1 SIM card slot

Packing List

- 1 x Quick installation guide
- 1 x Driver CD
- 4 x Foot pad
- 1 x Screw pack
- 1 x Wall mount kit
- 4 x DRAM thermal pad
- 1 x Terminal block DC In connector
- 2 x SATA drive key

Dimensions



Optional

2.5" SATA HDD/SSD	64GB or above
CFast	64GB or above
DDR4 SO-DIMM	4GB to 16GB
3G/4G/GPS module	826N3230140E
Wi-Fi/Bluetooth module	826N3230110E
DC in cable	594B8120B30E (M12, w/o ACC)
Remote switch cable	594K3101020E
LAN cable	594N3202730E (M12-A male 8P to RJ-45)
AC to DC adapter	50906D24000E (24V/120W, WIRE), 50966224010E (24V 90W, M12 Acode 5P)
Power cord	59903000000E (EU), 59906000010E (JP), 59902000000E (US), 59904000000E (UK)

*Specifications and certifications may vary based on different requirements.