

tBOX324-894-FL

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

Features

- CE (Class A), EN 50155, EN 50121-3-2, E-Mark, ISO 7637-2, IEC 60945 certified and DNV 2.4 compliance
- 7th gen Intel® Core™ i7/i5/i3 & Celeron® processor
- 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 ~ 3.9 GHz Intel® Core™ i5-7300U 2C @ 2.6 ~ 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 border="0"> <tr> <td>Rear Side</td> <td> <ul style="list-style-type: none"> 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 isolated DIO 4-in/4-out (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 M12 A-coded GbE LAN 3 x Antenna opening </td> </tr> <tr> <td>Front Side</td> <td> <ul style="list-style-type: none"> 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 Side	<ul style="list-style-type: none"> 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 isolated DIO 4-in/4-out (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 M12 A-coded GbE LAN 3 x Antenna opening 	Front Side	<ul style="list-style-type: none"> 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
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Watchdog Timer	255 levels, 1 ~ 255 sec.				
Storage	2 x 2.5" 7/9.5 mm SATA drive 1 x CFast™				
RAID function	Intel® RAID 0/1				
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 ver. DC-input: 24/110VDC (tolerance: 14 ~ 32VDC/77 ~ 137.5 VDC) Vehicle ver. DC-input: 12/24VDC (tolerance: 9 ~ 36VDC, w/ ACC ignition) Marine ver. DC-input: 24VDC (tolerance: 14 ~ 32VDC)				
Operating Temperature	-40°C ~ +70°C (-40°F ~ +158°F) with W.T. SSD 0°C ~ +55°C (+32°F ~ +131°F) with HDD				
Humidity	10% ~ 95%, non-condensing				
Vibration Endurance	3 Grms w/ SSD, 1 Grms w/ HDD (5 ~ 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)
Certificates	CE (Class A), FCC, EN 50155, EN 50121-3-2, E-Mark, ISO 7637-2, DNV 2.4 and IEC 60945 certified EN 45545-2 compliance
EOS support	Windows® 10 64-bit, Linux

Ordering Information

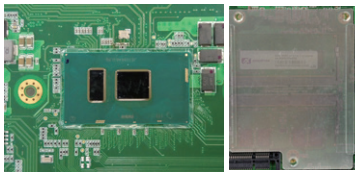
Standard	
tBOX324-894-FL-Celeron-DIO-24MRDC-CAN (P/N: E26N324100)	Fanless railway embedded system with Intel® Celeron® 3965U 2.2 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (M12), 3 COM, CAN, DIO, two 2.5" SATA trays, M12 A-code 5P DC-in, and 14 ~ 32VDC
tBOX324-894-FL-i3-DIO-24MRDC-CAN (P/N: E26N324101)	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 ~ 32VDC
tBOX324-894-FL-i5-DIO-24MRDC-CAN (P/N: E26N324102)	Fanless railway embedded system with Intel® Core™ i5-7300U 2.6 ~ 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 ~ 32VDC
tBOX324-894-FL-i7-DIO-24MRDC-CAN (P/N: E26N324103)	Fanless railway embedded system with Intel® Core™ i7-7600U 2.8 ~ 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 ~ 32VDC
tBOX324-894-FL-Celeron-DIO-TMDC-CAN (P/N: E26N324104)	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, and 14 ~ 32VDC
tBOX324-894-FL-i3-DIO-TMDC-CAN (P/N: E26N324105)	Fanless marine 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, TB 3P DC-in, and 14 ~ 32VDC
tBOX324-894-FL-i5-DIO-TMDC-CAN (P/N: E26N324106)	Fanless marine embedded system with Intel® Core™ i5-7300U 2.6 ~ 3.5 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, and 14 ~ 32VDC
tBOX324-894-FL-i7-DIO-TMDC-CAN (P/N: E26N324107)	Fanless marine embedded system with Intel® Core™ i7-7600U 2.8 ~ 3.9 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, and 14 ~ 32VDC
tBOX324-894-FL-Celeron-DIO-TVDC-CAN 2018 Q3 available	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 ~ 36VDC, TB 3P DC-in, and ACC ignition
tBOX324-894-FL-i3-DIO-TVDC-CAN 2018 Q3 available	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 ~ 36VDC, TB 3P DC-in, and ACC ignition
tBOX324-894-FL-i5-DIO-TVDC-CAN 2018 Q3 available	Fanless vehicle embedded system with Intel® Core™ i5-7300U 2.6 ~ 3.5 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (RJ-45), 3 COM, CAN, DIO, two 2.5" SATA trays, 9 ~ 36VDC, TB 3P DC-in, and ACC ignition
tBOX324-894-FL-i7-DIO-TVDC-CAN 2018 Q3 available	Fanless vehicle embedded system with Intel® Core™ i7-7600U 2.8 ~ 3.9 GHz processor, 4 USB, VGA, DVI-I, 4 GbE LANs (RJ-45), 3 COM, CAN, DIO, 9 ~ 36VDC, two 2.5" SATA trays, TB 3P DC-in, and ACC ignition

tBOX324-894-FL-Celeron-DIO-110MRDC-CAN 2018 Q3 available	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 77 ~ 137.5VDC
tBOX324-894-FL-i3-DIO-110MRDC-CAN 2018 Q3 available	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 77~137.5VDC
tBOX324-894-FL-i5-DIO-110MRDC-CAN 2018 Q3 available	Fanless railway embedded system with Intel® Core™ i5-7300U 2.6 ~ 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 77~137.5VDC
tBOX324-894-FL-i7-DIO-110MRDC-CAN 2018 Q3 available	Fanless railway embedded system with Intel® Core™ i7-7600U 2.8 ~ 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 77~137.5VDC

Optional	
2.5" SATA HDD/SSD	64GB or above
CFast	64GB or above
DDR4 SO-DIMM	4GB ~ 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 certificates may vary subject to options required.

Expansion & Installation



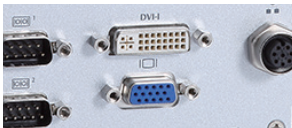
Onboard processor design and unique thermal/heat sink plate on the system memory for great reliability



Swappable and Lockable SATA3 HDD/SSD, USB 3.0 and CFast



Optional M12 type for DC-in jack and LAN jack



DVI-I and VGA display



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



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

Power Protection

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

Vehicle Version

- ISO 7637-2 pulse 1/2/3/4
- Setting for battery protection: Low voltage or very low voltage
- Setting for ignition control: Low voltage counter, ACC-ON delay, Shut down delay

Dimensions

