

# tBOX321-870-FL

Fanless Embedded System with 3rd Gen Intel® Core™ Processor and Intel® QM77 for Railway PC

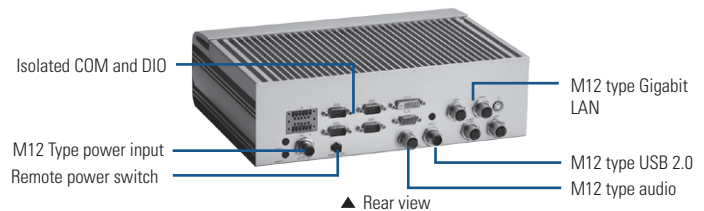
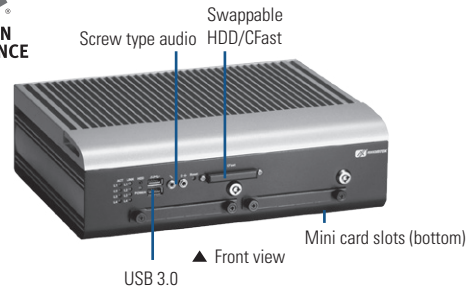
## Features

- EN 50155 and EN50121 certified
- Comply to fire protection of railway vehicles Europe standard PrCEN TS 45545-2
- 3rd gen Intel® Core™ i7 or Intel® Core™ i3 processor
- DDR3-1600 4GB memory onboard
- Fanless design and wide temperature range from -40°C to +70°C
- Isolated RS-232/422/485 and DIO
- USB 3.0 and SATA3
- 2 removable & lockable 2.5" SATA HDD and 1 CFast™
- 3 internal PCIe Mini Card slot and 1 SIM slot
- IEEE802.3at PoE Gigabit LAN



## Specifications

Standard Color	Silver-Black				
Construction	Aluminum extrusion and heavy-duty steel, IP40				
CPU	3rd generation Intel® Core™ i7-3517UE (1.7 GHz up to 2.8 GHz) or 3rd generation Intel® Core™ i3-3217UE (1.6 GHz)				
System Memory	DDR3-1600 4GB DRAM				
Chipset	Intel® QM77				
BIOS	AMI UEFI BIOS with OA 3.0 built				
System I/O Outlet	<table border="0"> <tr> <td>Rear Side</td> <td>           4 x GbE LAN (M12 A-coded)            4 x Isolated RS-232/422/485            1 x Isolated DI/DO (4-in/4-out)            1 x USB 2.0 (M12 A-coded)            1 x Audio (mic-in/line-out, M12 D-coded)            1 x VGA            1 x DVI-D            1 x VDC power input (M12 A-coded)            1 x Remote power switch            1 x Power button            3 x Antenna opening         </td> </tr> <tr> <td>Front Side</td> <td>           2 x USB 3.0            2 x Audio (mic-in/line-out, screw type)            1 x Reset switch            2 x 2.5" SATA drive trays            1 x CFast™ slot         </td> </tr> </table>	Rear Side	4 x GbE LAN (M12 A-coded) 4 x Isolated RS-232/422/485 1 x Isolated DI/DO (4-in/4-out) 1 x USB 2.0 (M12 A-coded) 1 x Audio (mic-in/line-out, M12 D-coded) 1 x VGA 1 x DVI-D 1 x VDC power input (M12 A-coded) 1 x Remote power switch 1 x Power button 3 x Antenna opening	Front Side	2 x USB 3.0 2 x Audio (mic-in/line-out, screw type) 1 x Reset switch 2 x 2.5" SATA drive trays 1 x CFast™ slot
Rear Side	4 x GbE LAN (M12 A-coded) 4 x Isolated RS-232/422/485 1 x Isolated DI/DO (4-in/4-out) 1 x USB 2.0 (M12 A-coded) 1 x Audio (mic-in/line-out, M12 D-coded) 1 x VGA 1 x DVI-D 1 x VDC power input (M12 A-coded) 1 x Remote power switch 1 x Power button 3 x Antenna opening				
Front Side	2 x USB 3.0 2 x Audio (mic-in/line-out, screw type) 1 x Reset switch 2 x 2.5" SATA drive trays 1 x CFast™ slot				
Watchdog Timer	255 levels, 0 ~ 255 sec./min.				
Storage	2 x 2.5" SATA HDD (removable and with lock protection), with RAID 0/1 1 x CFast™				
Expansion Interface	3 x PCIe Mini card slot 1 x SIM card slot				
System Indicator	1 x green LED for system power on 1 x blue LED for HDD active 1 x green LED for LAN1 link 1 x green/yellow LED for LAN 1 speed 1 x green LED for LAN2 link 1 x green/yellow LED for LAN 2 speed 1 x green LED for LAN3 link 1 x green/yellow LED for LAN 3 speed 1 x green LED for LAN4 link 1 x green/yellow LED for LAN 4 speed				
Power Supply	Power input : 14 VDC ~ 32 VDC, 77 ~ 137.5 VDC (isolation) Typical : 24, 110 VDC				
Power Consumption	1.8A @ 24V, 0.5A @ 110V				



Operating Temperature	-40°C ~ +70°C (-40°F ~ +158°F) with W.T. SSD -25°C ~ +55°C (-13°F ~ +131°F) with W.T. HDD
Humidity	5% ~ 95%, non-condensing
Vibration Endurance	certified by EN 50155 standard 3 Grms with SSD & CFast™ (5-500Hz, X, Y, Z direction; Random) 1 Grms with HDD (5-500Hz, X, Y, Z direction; Random)
Dimensions	288 mm (11.33") (W) x 211 mm (8.3") (D) x 85.7 mm (3.37") (H)
Weight (net/gross)	5.5 kg (12.12 lb)/6.5 kg (14.33 lb)
Certificate	CE (Class A), EN 50155, EN 50121, EN 45545, EN 60950 compliance
EOS Support	WE8S, WES 7, Linux

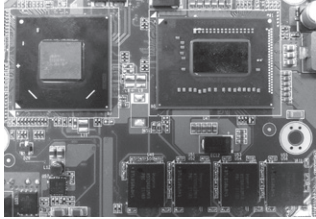
## Ordering Information

Standard	
tBOX321-870-FL-i7-DC	Fanless railway embedded system with Intel® Core™ i7-3517UE, 4GB DDR3-1600, 4 GbE LANs (M12), 4 isolated COM and CFast™
tBOX321-870-FL-i3-DC	Fanless railway embedded system with Intel® Core™ i3-3217UE, 4GB DDR3-1600, 4 GbE LANs (M12), 4 isolated COM and CFast™
tBOX321-870-FL-i7-110VDC	Fanless railway embedded system with Intel® Core™ i7-3517UE, 4GB DDR3-1600, 4 GbE LANs (M12), 4 isolated COM and CFast™, 110VDC power input
tBOX321-870-FL-i3-110VDC	Fanless railway embedded system with Intel® Core™ i3-3217UE, 4GB DDR3-1600, 4 GbE LANs (M12), 4 isolated COM and CFast™, 110VDC power input
Optional	
2.5" SATA HDD/SSD	16GB or above
CFast™	1GB or above
3G module	
Wi-Fi module	
Wi-Fi Bluetooth	
GPS module	
M12 Gigabit LAN cable	
M12 power cable	
M12 USB cable	
M12 audio cable	
Remote switch cable	
Power input voltage	24/110VDC

\*Specifications and certifications are based on options and may vary.

Updated Feb. 24, 2017. \* All specifications and photos are subject to change without notice.

## Expansion & Installation



Onboard 3rd generation Intel® Core™ i7 or i3 processor and 4GB DDR3-1600 DRAM



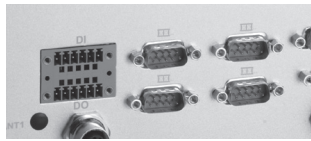
Swappable and lockable SATA3 HDD/SSD, audio jack, USB 3.0 & CFast™



M12 type for Gigabit LAN, USB 2.0 & audio port



M12 type power connector and remote switch connector



Isolated RS-232/422/485 & DIO ports



3 PCIe Mini Card slots and 1 SIM slot

## Packing List

- 1 x Quick manual
- 1 x Driver CD
- 1 x Screw pack
- 4 x Foot pad
- 1 x Wall-mount kit

## Power Protection

### DC Version

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

## Dimensions

