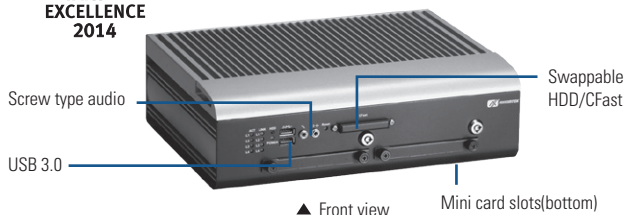


tBOX321-870-FL

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

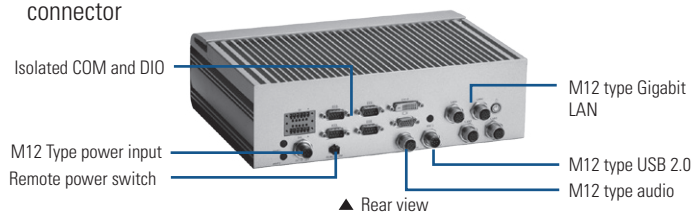


Specifications

Standard Color	Silver-Black				
Construction	Aluminum extrusion and heavy-duty steel, IP40				
CPU	3rd Generation Intel® Core™ i processor ; 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 4 GB 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) Supports RAID 0/1 1 x CFAST™				
Expansion Interface	3 x PCI Express Mini Card 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 : 14VDC ~ 32VDC, 77 ~ 137.5VDC (isolation) Typical : 24, 110VDC				
Power Consumption	1.8A @ 24V, 0.5A @ 110V				

Features

- EN50155, EN50121 certificates
- Fanless with operating temperature range of -40°C ~ +70°C (EN50155 class TX)
- Comply to fire protection of railway vehicles Europe standard PrCEN TS 45545-2
- 3rd generation Intel® Core™ i7 1.7 GHz up to 2.8 GHz or Intel® Core™ i3 1.6 GHz processor
- High performance DDR3-1600 4 GB memory onboard
- Isolated RS-232/422/485 and DIO ports
- Supports USB 3.0 and SATA3 interface
- 2 removable & lockable 2.5" SATA HDD and 1 CFAST™
- 3 internal PCI Express Mini Card slot and 1 SIM slot
- Lockable I/O interface and M12 type LAN, audio, power and USB connector



Operating Temperature	-40°C ~ +70°C (-40°F ~ +158°F) W/T SSD -25°C ~ +55°C (-13°F ~ +131°F) W/T HDD
Storage Temperature	-40°C ~ +80°C (-40°F ~ +176°F)
Humidity	5% ~ 95%, non-condensing
Vibration Endurance	Certificated by EN50155 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), EN50155, EN50121, EN45545, EN60950 compliance
EOS Support	WEBS, WES 7, Linux

Ordering Information

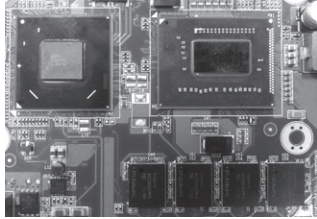
Standard	
tBOX321-870-FL-i7-DC	Fanless railway embedded system with 3rd generation Intel® Core™ i7-3517UE, 4 GB DDR3-1600, 4 GbE LAN (M12), 4 isolated COM and CFAST™
tBOX321-870-FL-i3-DC	Fanless railway embedded system with 3rd generation Intel® Core™ i3-3217UE, 4 GB DDR3-1600, 4 GbE LAN (M12), 4 isolated COM and CFAST™
tBOX321-870-FL-i7-110VDC	Fanless railway embedded system with 3rd generation Intel® Core™ i7-3517UE, 4 GB DDR3-1600, 4 GbE LAN (M12), 4 isolated COM and CFAST™, 110VDC power input
tBOX321-870-FL-i3-110VDC	Fanless railway embedded system with 3rd generation Intel® Core™ i3-3217UE, 4 GB DDR3-1600, 4 GbE LAN (M12), 4 isolated COM and CFAST™, 110VDC power input

Optional	
2.5" SATA HDD/SSD	16 GB or above
CFAST™	1 GB 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.

* All specifications and photos are subject to change without notice.

Expansion & Installation



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



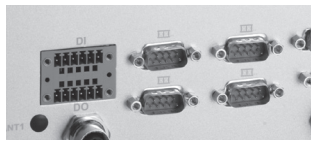
Swappable and lockable SATA3 HDD/SSD, audio jack, USB 3.0 & CFast™



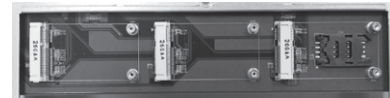
M12 type for Gigabit LAN, USB 2.0 & audio port



M12 type power connector and remote switch connector



Isolated RS-232/422/485 & DIO ports



3 PCIe Mini Card slots with 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

