tBOX321-870-FL
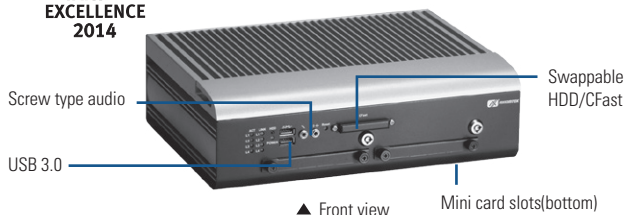
Fanless Embedded System with
3rd Generation Intel® Core™ Processor
and Intel® QM77 for Railway PC
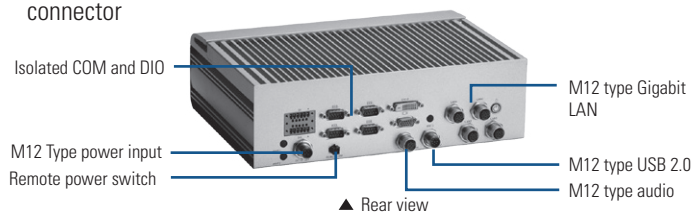
TAIWAN
EXCELLENCE
2014

Screw type audio

USB 3.0

Swappable
HDD/CFast

▲ Front view

Mini card slots(bottom)

| EN45545 | EN60950 | M12 Connector | Isolation | CFast™ | Swappable |
| EN50155 | IP40 | Fanless | Ext. Temp | DDR3 | |

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	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

Isolated COM and DIO

M12 type Gigabit LAN

M12 Type power input
Remote power switch

M12 type USB 2.0
M12 type audio

▲ Rear view

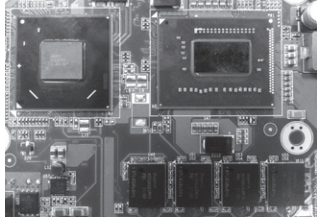|	
Operating Temperature	-40°C ~ +70°C (-40°F ~ +158°F) W/T SSD -25°C ~ +55°C (-13°F ~ +131°F) W/T HDD
Storage Temperature	-40°C ~ +80°C (-40°F ~ +176°F)
Humidity	5% ~ 95%, non-condensing
Vibration Endurance	Certificated by EN50155 standard 3 Grms with SSD & CFast™ (5-500Hz, X, Y, Z direction; Random) 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	WE8S, 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
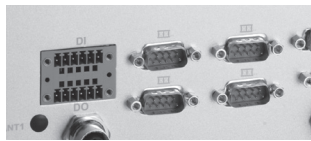

Swappable and lockable SATA3 HDD/SSD, audio jack, USB 3.0 & CFast™

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