

# tBOX320-852-FL

Fanless Embedded System with Intel® Core™ 2 Duo Processor 2.26 GHz and Intel® GM45 for Railway PC

Intel® Core™2 Duo SP9300 2.26 GHz  
or Intel® Celeron® M 723



Swappable HDD/CF

▲ Front view

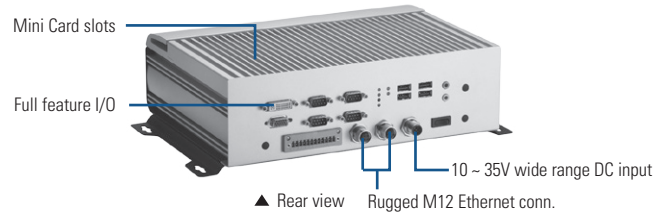


## Specifications

Standard Color	Silver-Black	
Construction	Aluminum extrusion and heavy-duty steel, IP40	
CPU	Intel® Core™ 2 Duo SP9300 2.26 GHz processor or Intel® Celeron® M 723 1.2 GHz processor	
System Memory	DDR3-1333 2 GB DRAM	
Chipset	Intel® GM45 + ICH9M	
BIOS	AMI	
System I/O Outlet	Rear Side	2 x GbE LAN (M12 D-coded) 4 x isolated RS-232/422/485 1 x isolated DI/DO (6-in/2-out) 4 x USB 2.0 2 x audio (mic-in/line-out) 1 x VGA 1 x DVI-D 1 x VDC power input (M12 A-coded) 1 x power switch 3 x antenna opening
	Front Side	2 x 2.5" SATA drive trays 1 x CFast™ slot 1 x SIM card socket
Watchdog Timer	255 levels, 1~255 sec.	
Storage	2 x 2.5" SATA HDD drive bay 1 x CompactFlash™	
Expansion Interface	2 x PCI Express Mini Card 1 x SIM card	
System Indicator	1 x green LED for system power-on 1 x red LED for HDD active 1 x green LED for LAN1 link 1 x green/yellow LED for LAN1 speed 1 x green LED for LAN2 link 1 x green/yellow LED for LAN2 speed	
Power Supply	DC 12~32V input with isolation support Default rating: DC24V M12 5-pin connector	
Power Consumption	6.7A @ 12V 3.4A @ 24V 2.5A @ 32V	
Operating Temperature	-25°C ~ +55°C (77°F ~ 130°F) (with W.T. HDD)	
Storage Temperature	-40°C ~ +80°C (-40°F ~ +176°F)	
Humidity	10% ~ 90%, non-condensing	
Vibration Endurance	2 Grms (5-500Hz, X, Y, Z directions)	

## Features

- EN50155, EN50121 certificates
- Fanless with operation temperature range of -25°C ~ +55°C
- Comply to fire protection of railway vehicles Europe standard PrCEN TS 45545-2
- Supports onboard Intel® Core™ 2 Duo SP9300 2.26 GHz or Intel® Celeron® M 723 1.2 GHz processor
- Intel® GM45 + ICH9M
- 4 isolated RS-232/422/485 ports
- High performance DDR3-1333 2 GB DRAM
- One 2.5" swappable SATA drive bay, 1 internal SATA drive bay and one CompactFlash™
- 2 internal PCI Express Mini Card slots with 1 SIM slot
- Lockable I/O interface and M12 LAN connector



▲ Rear view Rugged M12 Ethernet conn.

Dimensions	288 mm (11.33") (W) x 211 mm (8.3") (D) x 85.7 mm (3.37") (H)
Weight (net/gross)	5.06 kg (11.15 lb)/6.5 kg (14.33 lb)
Certificate	CE, EN50155, EN50121, EN45545, EN60950 compliance
EOS Support	XPE, WinCE, Linux

\*XPE: Windows® XP Embedded

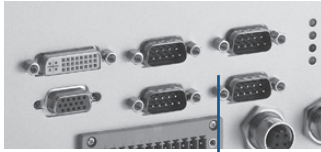
## Ordering Information

Standard	
tBOX320-852-FL-2.26G-DC	Fanless railway embedded system with Intel® Core™ 2 Duo SP9300 2.26 GHz processor, 4 COM, 4 USB, CFast™, 2 HDD support, onboard 2 GB DDR3-1333 DRAM and 4-pin GbE LAN M12
tBOX320-852-FL-1.2G-DC	Fanless railway embedded system with Intel® Celeron® M 723 1.2 GHz processor, 4 COM, 4 USB, CFast™, 2 HDD support, onboard 2 GB DRAM and 4-pin GbE LAN M12
tBOX320-852-FL-2.26G-DC-G	Fanless railway embedded system with Intel® Core™ 2 Duo SP9300 2.26 GHz processor, 4 COM, 4 USB, CFast™, 2 HDD support, onboard 2 GB DDR3-1333 DRAM and 8-pin GbE LAN M12 (optional lockable HDD cover)
tBOX320-852-FL-1.2G-DC-G	Fanless railway embedded system with Intel® Celeron® M 723 1.2 GHz processor, 4 COM, 4 USB, CFast™, 2 HDD support, onboard 2 GB DDR3-1333 DRAM and 8-pin GbE LAN M12 (optional lockable HDD cover)

Optional	
2.5" SATA HDD/SSD	40 GB or above
CompactFlash™	1 GB or above
3G module	
Wi-Fi module	
Wi-Fi Bluetooth	
GPS module	
Graphic accelerator codec	
M12 LAN cable	594N3202710E
M12 power cable	594B8120B30E
M12 Gigabit LAN cable	594N3202730E

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

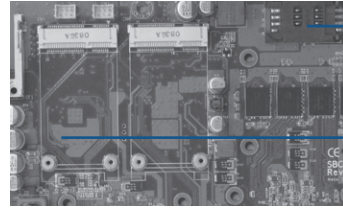
## Expansion & Installation



Lockable I/O connector



Easy access opening for HDD & CF

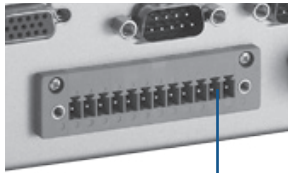


SIM slot

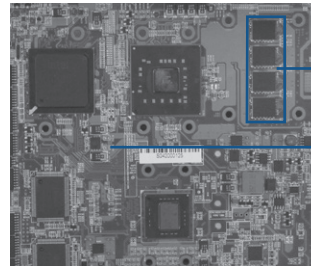
2 x Mini Card



M12 type connector



Isolated digital I/O



2 GB DDR3-1333 DRAM onboard

BGA type CPU & chipset

## Packing List

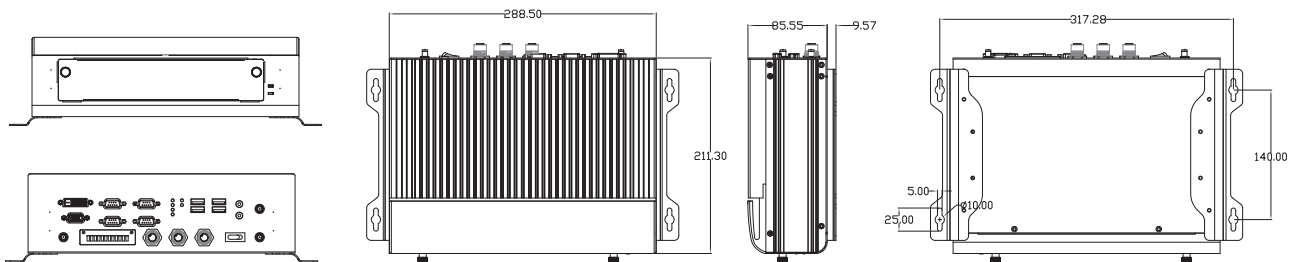
- 1 x quick manual
- 1 x driver CD
- 1 x screw pack
- 4 x foot pad
- 8 x HDD anti-vibration damper
- 1 x wallmount Kit

## Power Protection

### DC Version

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

## Dimensions



Overview

Embedded Systems

2

Embedded Systems for Transportation

Embedded Field Controllers

Industrial Firewall

Digital Signage Solutions

Embedded MicroBoxes

Industrial Barebone Systems

Industrial Chassis

Backplanes

Power Supplies

Peripherals & Accessories