

# TRACe-B40x-TR



## EN50155 Railway Baseline Computer

- ▶ Fanless Box Computer for rolling stock applications
- ▶ Intel Atom® E3900 series or 6th Gen Intel® Core™ i7/i3
- ▶ Easy Customization: front plate area for connectors, pre-holes for antennas, 3x mini PCIe card slots
- ▶ IP50 Ingress Protections from all directions, optional IP54
- ▶ Kontron Health Monitoring & Security solutions

POSSIBILITIES START HERE



## ▶ PRODUCT OVERVIEW

Kontron TRACe-B40x-TR is an EN50155 compliant fanless Transportation computer, specifically designed for rolling stock application where high processing capacity, low consumption, robustness and small size are requested to match your system requirements. The TRACe-B404-TR variant is based on Intel Atom® x5-E3940 quad-core @ 1.6 GHz high performance per watt processor with soldered 8 GByte memory and 32 GByte SLC Flash. Other variants are available based on Intel Atom® x5-E3930 dual-core @ 1.3 GHz , Intel Atom® x7-E3950 Quad Core™ @ 1.6 GHz, or even Intel® Core™ i7-6600U or Core™ i3-6100U (Skylake) processors when higher performance are needed.

Kontron TRACe-B40x-TR is a robust and very compact fanless computer providing high performance and high reliability in demanding railway environments. Kontron TRACe-B40x-TR features two independent networks (2x LAN with M12 connectors). It comes with a Ultra wide range power supply (from 24 VDC to 110 VDC nominal input voltage range, including tolerance range of +/- 40 % required according to EN 50155, meaning a voltage range between 14,4 VDC and 154 VDC) adapted to all types of railway vehicles from light rail vehicles to high speed trains.

The front plate operational connectors are electrically insulated according to EN50155 standard with lockable M12 connectors. The rear plate hosts standard connectors (Display Port, USB3.0/2.0, Serial line) for maintenance purposes and can be protected from Dust & Water during operations with a cover plate. Thanks to its modularity, the TRACe-B40x-TR product accommodates as well

several optional wireless interfaces, field busses (RS422/485, CAN, MVB ...) and/or additional optional I/Os (DIOs, Audio, USB...) to match any railway applications such as on-board CCTV, Entertainment/Infotainment PIS, or TCMS.

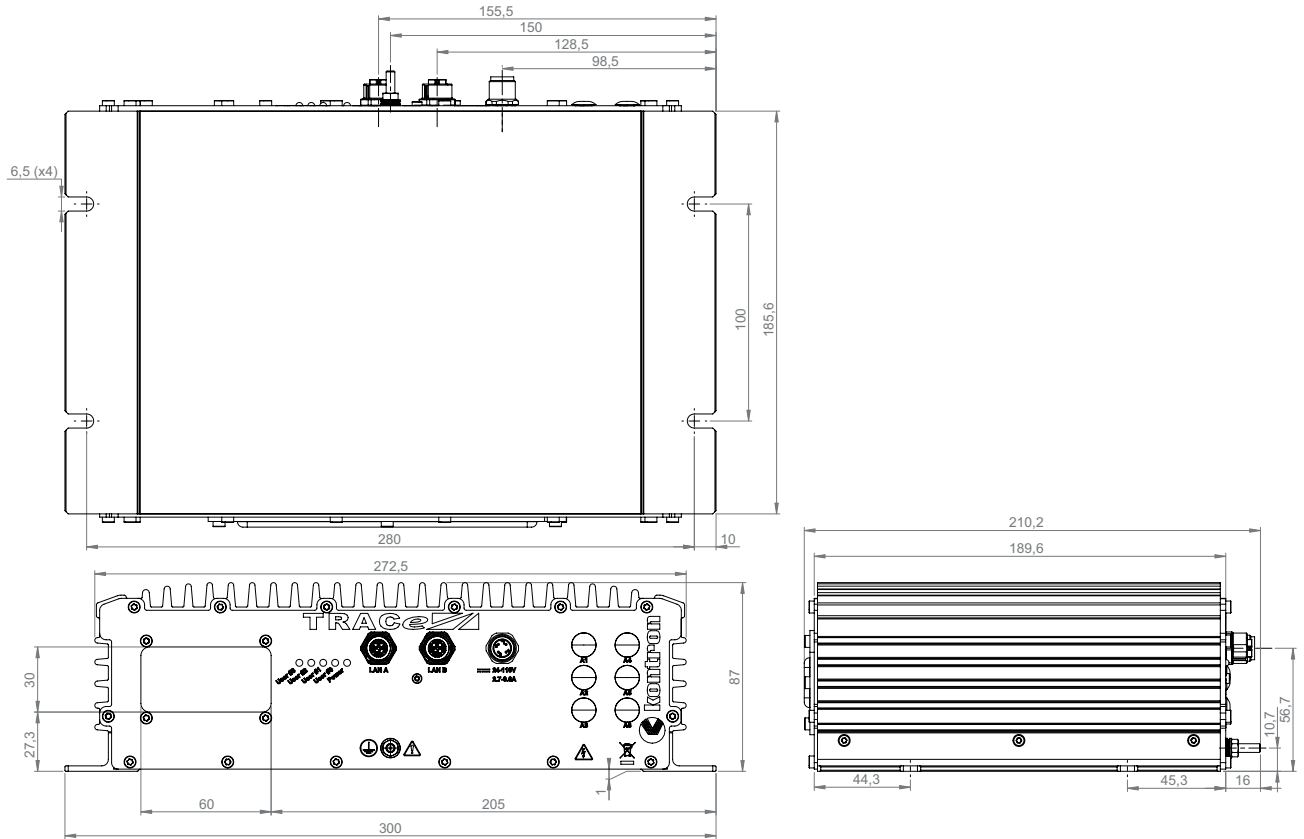
TRACe-B40x-TR offers a unique health management unit, performing system vital monitoring, thanks to multiple sensors. An integrated microcontroller, independent from the main processor, monitors several temperature sensors, controls supply voltages & current, and with Vital Product Data traceability of major TRACe components. This Health Management Unit is fully integrated in the CMON-Line Monitoring module by Kontron offering a turnkey, extensible and data centric solution for local or remote computer health monitoring. CMON-line Monitoring module covers all the vital resources of TRACe™ to report, log, and transmit any health management information or event. All data are accessible either locally, from Ethernet/Intranet or from Internet/Cloud, and offer an ideal support to data analytics, especially to support asset management, preventive maintenance and fleet management.

In addition, TRACe-B40x-TR is ready to support the new Kontron Security Solution "APPROTECT", a combined hardware and software technology ensuring IP and copy protection while avoiding reverse engineering and tampering. Kontron APPROTECT is a holistic hardware based security solution that provides customers the ability to address security needs at the application layer. Learn more on Kontron website.

► TECHNICAL INFORMATION

PROCESSOR		Intel Atom® x5-E3940 quad-core @ 1.6 GHz, 2 MByte L2 Cache Other supported configurations: Intel Atom® x5-E3930 dual-core @ 1.3 GHz, 2 MByte L2 Cache Intel Atom® x7-E3950 quad-core @ 1.6 GHz, 2 MByte L2 Cache Intel® Core™ i7-6600U (dual-core @ 2.6 GHz), 4 MByte SmartCache Intel® Core™ i3-6100U (dual-core @ 2.3 GHz, 3 MByte SmartCache)
MEMORY AND FLASH	SYSTEM MEMORY STORAGE FLASH	8 GByte DDR4 memory-down for Core™ i7/i3 variants, 8 GByte DDR3L for Intel Atom® E39xx variants 32 GByte SLC eMMC soldered Flash
MASS STORAGE		2 SATA connections –for 2.5 inch HDD or SSD
GRAPHICS CONTROLLER	GRAPHIC INTERFACE/ RESOLUTION	Integrated Intel® HD Graphics 520, Display Port / 4096x2304 @ 60 Hz for Core™ i7/i3 variants Integrated Intel® HD Graphics 500, Display Port / 4096x2304 @ 60 Hz for Intel Atom® E3930 and E3940 Integrated Intel® HD Graphics 505, Display Port / 4096x2304 @ 60 Hz for Intel Atom® E3950
OPERATIONAL PLATE	POWER ETHERNET LEDS	1x DC-IN on M12 A-coded connector (1.5 kV insulation) 2x Ethernet 10/100/1000 Mb/s, M12 8-pin-Female connectors (1.5 kV insulation) 1x Power Led, 4x User Leds
MAINTENANCE PLATE	SERIAL PORT USB DISPLAY LEDS	1 Serial Port 1x USB 3.0/2.0, 1x USB 2.0 1 Display Port 2 User Leds, 1 Power Led, 1 Alarm Led, 1 Sys Led
POWER SUPPLY		Input Voltage Ultra Wide Range 24 VDC ... 110 VDC (Class S2-C1, 10ms interruption)
EXTENSIONS		3x Mini PCI Express® sockets (USB 2.0, PCIe or USB 3.0 available) 2x SIM card holders (Dual SIM support) 1x mSATA slot (shared with one 2.5" SATA) Additional DDR4 (+8 or +16 GByte) for Core i3/i5/i7 variants only
PROTECTION CLASS		IP50 (default). Optional IP54 or IP65
OPERATING TEMPERATURE		-40 °C up to +70 °C +10 min@ 85 °C EN50155 Class OT4 S1, depending on configuration
STORAGE TEMPERATURE		-40 °C up to 85 °C
DIMENSIONS (W x D x H)		Approx 273 mm without ears (300 mm with ears) x 190 mm x 87 mm
OPERATING SYSTEM		Pre-installed Linux Fedora (default), Windows 10 IoT Enterprise LTSB
OPTIONS (ON REQUEST)		Industrial Grade SSDs (64 GByte to 2 TByte) or mSATA, Wi-Fi, LTE, GNSS, RS422/485, Audio, 8x Digital Inputs + 8x Digital Outputs, Dual CAN2.0B, MVB. Contact us for more information.
STANDARDS APPROVAL		EN50155, EN45545-2, CE, FCC part 15 class A

## ► DIMENSIONS



## ► ORDERING INFORMATION

ARTICLE	PART NO.	DESCRIPTION
TRACE-B404-TR-2-00001C-0-VX-L	1062-3287	Railway TRAcE fanless Computer Baseline - IEC60529 IP50 - COMe-cAL6 Intel Atom® E3940, 4x 1,6 GHz, 32 GByte SLC eMMC Flash - Ultra Wide Range 24-110 VDC EN50155 PSU class S2-C1 (with 10 ms interruption) - 8 GByte E2 DDR3L RAM - EN50155 Class Tx -40 °C +70 °C - Pre-installed Linux Fedora 64 bits - Conformal coating of internal components

## ► Global Headquarters

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