

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 GB DDR4 memory and 32 GB 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 V80x-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 V40x-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 MB L2 Cache Other supported configurations: Intel® Atom™ x5-E3930 dual-core @ 1.3 GHz, 2 MB L2 Cache Intel® Atom™ x7-E3950 quad-core @ 1.6 GHz, 2 MB L2 Cache Intel® Core™i7-6600U (dual-core @ 2.6 GHz), 4 MB SmartCache Intel® Core™i3-6100U (dual-core @ 2.3 GHz), 3 MB SmartCache
MEMORY AND FLASH	System Memory	8 GB DDR4 memory-down for Core™ i7/i3 variants, 8 GB DDR3L for Atom™ E39xx variants
	Storage Flash	32 GB SLC eMMC soldered Flash
MASS STORAGE		2 SATA connections –for 2.5 inch HDD or SSD
GRAPHIC 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 Atom™ E3930 and E3940 Integrated Intel® HD Graphics 505, Display Port / 4096x2304 @ 60 Hz for Atom™ E3950
OPERATIONAL PLATE	Power	1x DC-IN on M12 A-coded connector (1.5 kV insulation)
	Ethernet	2x Ethernet 10/100/1000 Mb/s, M12 8-pin-Female connectors (1.5 kV insulation)
MAINTENANCE PLATE	LEDs	1x Power Led, 4x User Leds
	Serial port	1 Serial Port
	USB	1x USB 3.0/2.0, 1x USB 2.0
	Display	1 Display Port
POWER SUPPLY	LEDs	2 User Leds, 1 Power Led, 1 Alarm Led, 1 Sys Led
EXTENSIONS		Input Voltage Ultra Wide Range 24VDC...110VDC (Class S2-C1, 10ms interruption)
		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 via SODIMM (+8 or +16GB) (on request only)
PROTECTION CLASS		IP50 (default). Optional IP54 or IP65
OPERATING TEMPERATURE		-40°C up to +70°C +10 min @ 85°C EN50155 Class Tx, depending on configuration
STORAGE TEMPERATURE		-40°C up to 85°C
DIMENSIONS		(WxDxH) Approx 273 mm without ears (300 mm with ears) x 190 mm x 90 mm
OPERATING SYSTEM		Pre-installed Linux Fedora (default), Windows 10 support
OPTIONS (ON REQUEST)		Conformal Coating of internal components, Industrial Grade SSDs (128GB to 2TB) or mSATA, Wi-Fi, LTE, GNSS, RS422/485, Audio, 4x Digital Inputs + 4x Digital Outputs, Dual CAN2.0B, MVB. Contact us for more information.
STANDARDS APPROVAL		EN50155, EN45545-2, CE, FCC part 15 class A

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