

TRACe G304-TR



EN50155^(*) WIRELESS GATEWAY

- ▶ Fanless Box Computer for rolling stock Gateway Applications
- ▶ Intel® Atom™ E3845 quad-core @ 1.91 GHz (Bay Trail)
- ▶ Connectivity: 2x LAN, 1x WWAN with GPS, 1x WLAN
- ▶ IP50 (Desktop) / IP51 (Wall Mount) Ingress Protection from all directions
- ▶ EN50155 Class Tx (Operating -40°C to +70°C / 10 min @ +85°C)

^(*) Conformal coating of internal components is optional.

▶ PRODUCT OVERVIEW

Kontron TRACe G304-TR is an EN50155 compliant⁽¹⁾ fanless Operational Computer. This "G" version is a certified Gateway enabling data connectivity to telemetry devices, station and train control, specifically designed for rolling stock remote control operations and infotainment applications.

The G304-TR version is based on an Intel® Atom E3845 quad-core @ 1.91 GHz Bay Trail processor. It has been designed to ensure stable operation in harsh environments.

Thanks to its various communication channels, Kontron TRACe G304-TR is ideal for any Gateway applications:

WIRED NETWORKING:

- ▶ Kontron TRACe G304-TR offers 2 independent Gigabit Ethernet LAN through isolated and filtered M12 connectors.

WIRELESS NETWORKING:

- ▶ TRACe G304-TR features 1x WLAN 802.11 a/b/g/n Wi-Fi network interface, supporting the high transmission data rate and reliable performance ideal for streaming multimedia applications. It provides 3-stream MIMO configurations, which is a suitable choice for Wi-Fi applications, such as high-end Wi-Fi applications (mesh network, wireless monitor, and high-end computer) or digital networking equipment (access point, router, set-top box, and gateway), and video-over-wireless applications.

- ▶ Kontron TRACe G304-TR enables WWAN network connection through a 2G/3G/4G cellular modem (dual SIM support) offering LTE/HSPA+/GSM/GPRS/EDGE/EV-DO Rev A/1x RTT interfaces and even GPS location solutions: A-GPS, gps XTRA and Glonass.

The Kontron TRACe G304-TR features a wide range power supply (from 24 VDC to 110 VDC). Its front plate is dedicated to the operational connectors (certified I/O according to EN50155 standard: Ethernet, Serial ports, Audio, Digital Inputs and Outputs) whereas the rear plate hosts maintenance connectors (DisplayPort, USB, Serial, Ethernet).

Internally, Kontron TRACe G304-TR also provides 2 x 2.5" SATA disks connections.

TRACe G304-TR has been designed to support a comprehensive health management capability, thanks to sensors and a microcontroller for system health monitoring.

The integrated microcontroller monitors boards and in-box ambient temperature, voltages, current and even manages Vital Product Data (P/N, S/N, EC Lvl...) of main components.

Health management middleware by Kontron covers all the vital resources of TRACe™ to report, log, and transmit any out of specs parameters and/or any failures at power-on and during operations of TRACe G304-TR.

⁽¹⁾ Conformal coating of internal components is optional.

▶ TECHNICAL INFORMATION

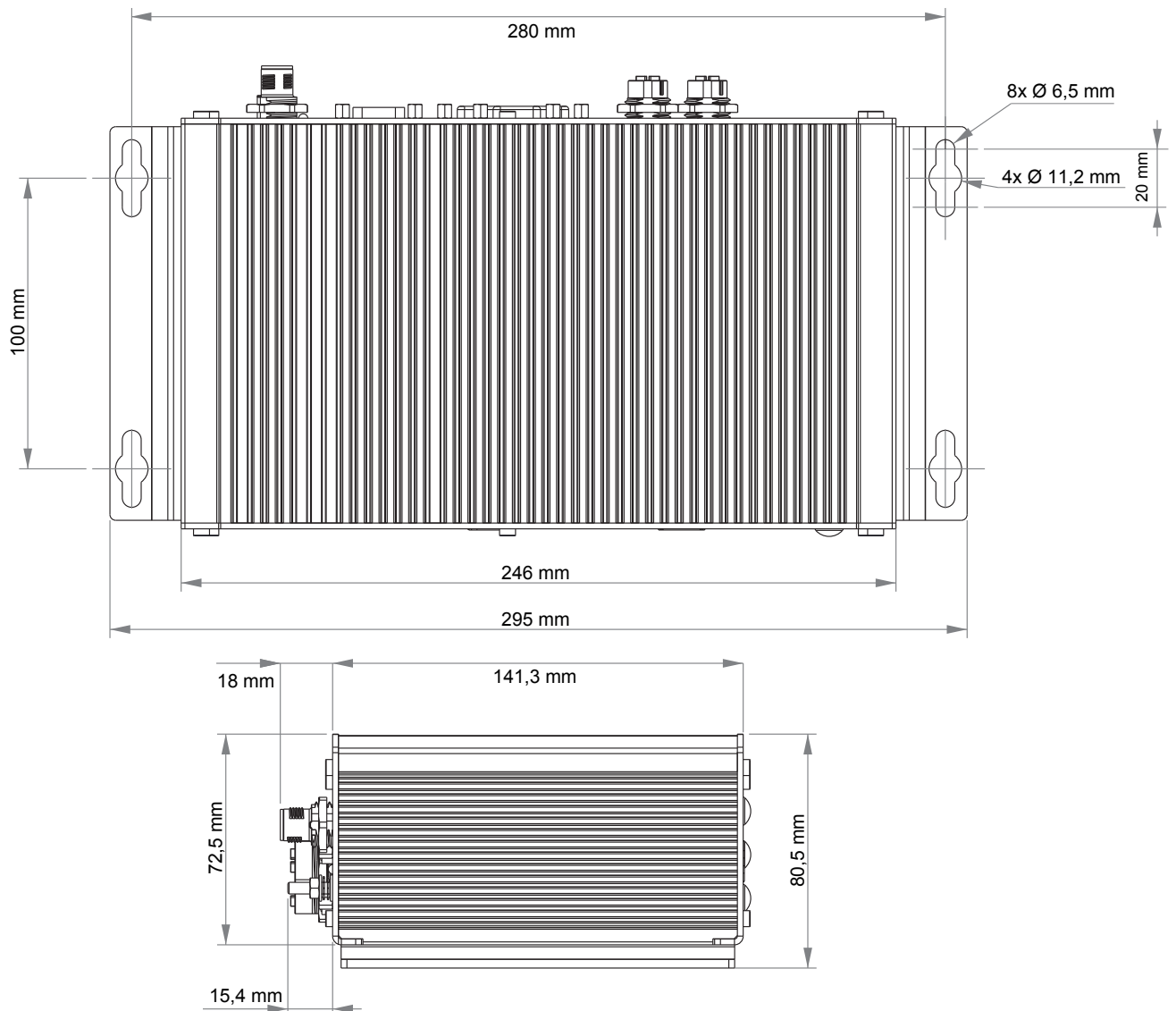
| | | |
|--------------------|--|--|
| PROCESSOR | | Intel® Atom™ Bay E3845 quad-core @ 1.91 GHz (Bay Trail-I Platform) |
| MEMORY | System Memory Flash | 2 GB DDR3 with ECC 8 GB soldered SLC Flash (eMMC) |
| CONNECTIVITY | LAN WLAN WWAN GPS Location Solutions | 2x LAN GbE (M12 connectors) 1x Wi-Fi 802.11 a/b/g, 802.11n 3T3R up to 450 Mbps 1x 4G modem LTE/HSPA+/GSM/GPRS/EDGE/EV-DO Rev A/1xRTT (EMEA / Australia or Americas variant) A-GPS, A-GNSS,gps XTRA, Glonass |
| MASS STORAGE | | 2 SATA connections –for 2.5 inch HDD or SSD By default : 1x internal 128GB SSD MLC Industrial Grade Temperature |
| GRAPHIC CONTROLLER | | Integrated 1D/3D Graphics Engine, GMA 3650/3600, Gfx clock 640/400 MHz, DirectX®9.1, Video Decode: MPEG2, Blu-Ray Disk 2.0, VC-1, H.264, WMV9 up to 1080p |
| OPERATIONAL PLATE | Interface/resolution Serial Ethernet Audio Controller Audio Interface Digital Input Digital Output LED Input Power | DisplayPort / 1366x768@112 MHz 2x serial ports (RS232-RS422-RS485), software configurable (insulated) 2x Ethernet 10/100/1000 Mb/s, M12 X-coded 8-poles Female connectors (insulated) Intel® High Definition Audio w/ HDMI 1.3a support Stereo Line In, Stereo Line Out 4x Inputs (sink current 10 mA, 1.5 Kv insulation) 4x Outputs (open drain 24 VDC/10 mA, 1.5 Kv insulation) 1x System Power LED 1x DC IN power (1.5 kV insulation), M12 A-coded 4 Pin Male connector (with Ignition Pin for Power Control) |
| MAINTENANCE PLATE | Serial port USB Ethernet Display LEDs | 1x serial port 1x USB 3.0 (Super Speed 4 Gb/s), 1x USB 2.0 (Hi Speed 480 Mb/s) 1x Ethernet 10/100/1000 Mb/s 1x DisplayPort 2x User LEDs, 1x Power LED, 1x Alarm LED, 1x System LED |
| POWER SUPPLY | | Input Voltage wide range 24 VDC...110 VDC (Class S2, 10 ms interruption) ⁽¹⁾ |
| EXTENSION | | 2x SIM card holders (Dual SIM support), 1x free 2.5" SATA Disk holder left |
| SUPPORTED OS | | 1x mSATA using Mini PCI-Express card slot (shared with one 2.5" SATA) Pre-installed Linux Fedora 64 bits (default), Windows 7, Windows Embedded Standard 7, Windows Embedded Standard 8 |
| OPTIONS | | Conformal coating |

▶ ENVIRONMENTAL SPECIFICATIONS

| | | |
|------------------------------|--|---|
| OPERATING TEMPERATURE | | -40°C up to +70°C (with 10 min at +85°C) EN50155 Class Tx |
| STORAGE TEMPERATURE | | -40°C to +85°C |
| ENVIRONMENT / CERTIFICATIONS | ITE Safety Europe Railway Safety Thermal Operating Climatic Test Random Vibration Shock EMC Emission EMC Immunity ECM and ERM GSM and MS Radiated Emissions Others Environmental Protection | EN 60950-1: 2006 +A1: 2010 +A2: 2013 + A11: 2009 +A12: 2011. Safety Europe Directive Supply Voltage: EN 50155: 2007. Railway Class Tx EN 50155 / NF EN 60068-2-1: 2007 / NF EN 60068-2-2: 2007. Railway Damp heat (55°C, 95% Relative Humidity), cyclic EN 50155 / NF EN 60068-2-30 Railway Operating, Long life testing EN 50155 / NF EN 61373: 2011-04 / NF EN 60068-2-64: 2008 EN 50155 / NF EN 61373: 2011-04 / NF EN 60068-2-27: 2009. Railway Class 1B EN 50155 / NF EN50121-3-2 / EN 55011 ⁽¹⁾ EN 50155 / NF EN50121-3-2 / EN 61000-4-2 / -4-3 / -4-4 / -4-5 / -4-6 R & TTE (EN300328 V1.8.1) R & TTE (EN301 511 V9.0.2) R & TTE (EN301 901-1 V5) CE, UL, WEEE, RoHS IP50 in Desktop position / IP51 in Wall Mounting position (NF EN 60529: 2000) ⁽¹⁾ |

⁽¹⁾ Tests validated with optional Cover Plate P/N TRACE-KITMT-1-V01 on Maintenance side.

▶ DIMENSIONS



► ORDERING INFORMATION

| ARTICLE | ORDER CODE | DESCRIPTION |
|-------------|--------------------|---|
| TRACe | TRACE-G304-TR | EN50155 ⁽¹⁾ fanless Gateway for EMEA / Australia. Intel® AtomE3845 BayTrail (quad core @ 1.91 GHz) COMe CPU / 2GB DDR3 with ECC, 8 GB SLC eMMC soldered Flash, Wi-Fi 802.11 a/b/g/n 3T3R up to 450 Mbps, 3G/4G/GNSS (EMEA / Australia variant), 128 GB SSD MLC I-TEMP, Pre-installed Linux OS. EN50155 class S2 Ultra Wide Range PSU 24 VDC-110 VDC / EN50155 Class TX (-40° to 70° C / 10min @ 85°C). IP50 horizontal position (desktop), IP51 vertical position (wall mount) with optional cover plate TRACE-KITMT-1-V01 (to be purchased separately) ⁽¹⁾ conformal coating of internal components is optional |
| TRACe | TRACE-G304-TR-A | EN50155 ⁽¹⁾ fanless Gateway for Americas. Intel® Atom E3845 BayTrail (quad core @ 1.91 GHz) COMe CPU, 2 GB DDR3 with ECC, 8 GB SLC eMMC soldered Flash, Wi-Fi 802.11 a/b/g/n 3T3R up to 450 Mbps, 3G/4G/GNSS (Americas variant), 128 GB SSD MLC I-TEMP, Pre-installed Linux OS. EN50155 class S2 Ultra Wide Range PSU 24 VDC-110 VDC / EN50155 Class TX (-40° to 70° C / 10min @ 85°C). IP50 horizontal position (desktop), IP51 vertical position (wall mount) with optional cover plate TRACE-KITMT-1-V01 (to be purchased separately) ⁽¹⁾ conformal coating of internal components is optional |
| CABLE | TRACE-KIT-CAB-EVAL | Set of Cables for TRACe™ evaluation, consisting of: <ul style="list-style-type: none"> ▶ 1x Cable ASSY - Power (M12-A coded to free end), ▶ 1x Ethernet (M12-X coded to RJ-45), ▶ 1x Serial (RJ-12 to dual DB9) (see TRACe-TR Family User's Manual) |
| CABLE | TRACE-KITSATA-2 | Set of SATA cables to install one 2,5" SSD on TRACe™, consisting of: <ul style="list-style-type: none"> ▶ 1x SATA Pow cable, ▶ 1x SATA Data cable, ▶ 4x screws |
| CABLE | TRACE-STARTERKIT-1 | Complete set of cables / accessories for TRACe evaluation, consisting of: <ul style="list-style-type: none"> ▶ 1x AC/DC converter cable assembly for DC-IN ▶ 1x USB Key Fedora 22 TRACe Live Image ▶ 1x M12 to RJ-45 Ethernet Cable ▶ 1x DisplayPort to VGA adapter ▶ 1x Serial cable (RJ-12 to dual DB9: CPU_A, CPU_B) : 1x KIT-2X-RJ12DB9 ▶ 3x Wi-Fi antennas Dual Band 2,4 GHz-5 GHz , ▶ 2x 3G/LTE antennas 5dBi, ▶ 1x GPS antenna |
| COVER PLATE | TRACE-KITMT-1-V01 | Maintenance Cover Plate for Dust & Water Protection |
| AC/DC PSU | TRACE-PSUASSY | TRACe AC PSU / Adapter 100-240 VAC to 24 VDC with M12 DC-IN Connector. FOR LAB USE |

► CORPORATE OFFICES

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