TRACe G304-TR

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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.

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▶ PRODUCT OVERVIEW

Kontron TRACe G304-TR is an EN50155 compliant(*) 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.

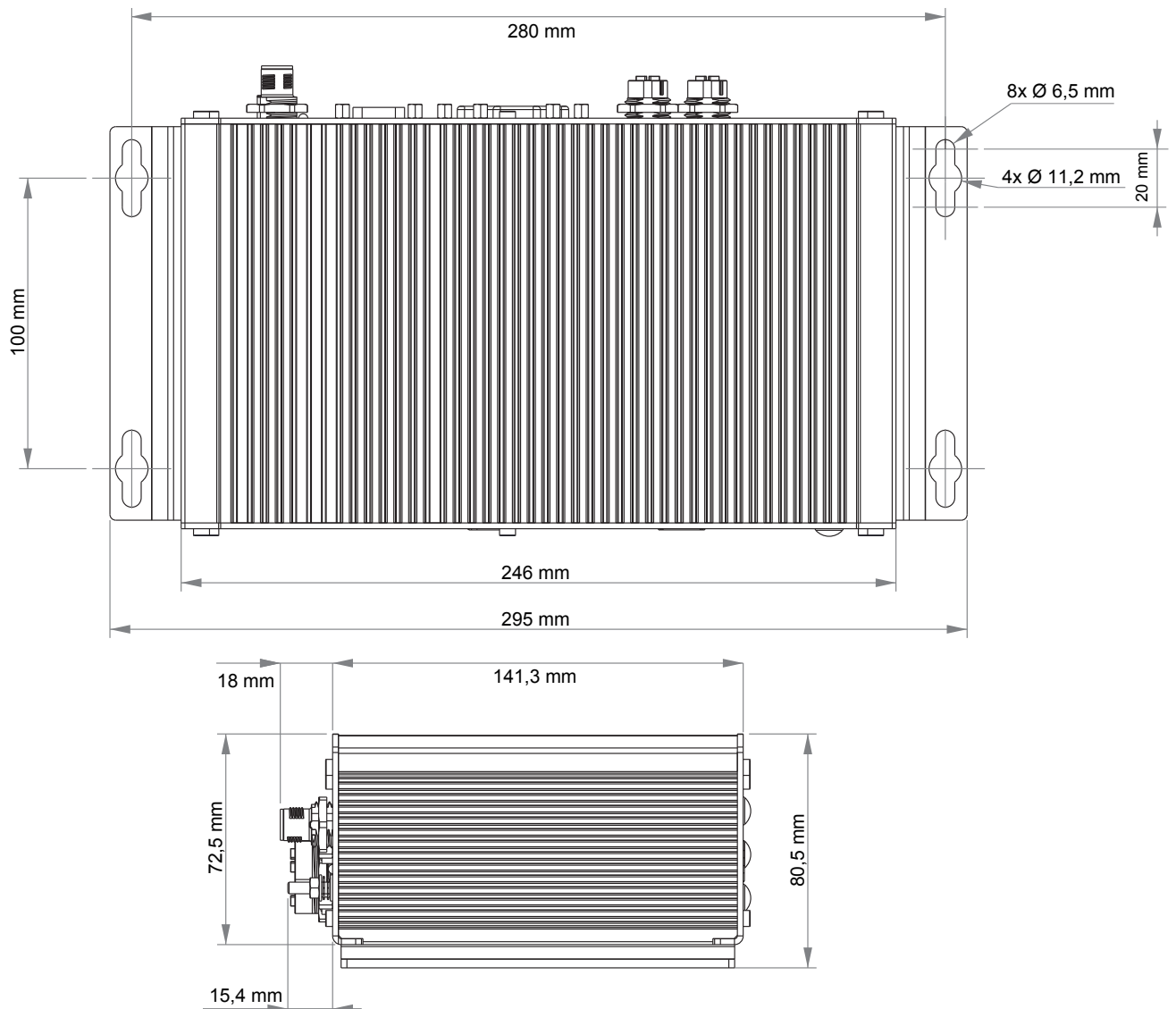(*) Conformal coating of internal components is optional.

▶ TECHNICAL INFORMATION

PROCESSOR		Intel® Atom™ Bay E3845 quad-core @ 1.91 GHz (Bay Trail-I Platform)
MEMORY	System Memory	2 GB DDR3 with ECC
	Flash	8 GB soldered SLC Flash (eMMC)
CONNECTIVITY	LAN	2x LAN GbE (M12 connectors)
	WLAN	1x Wi-Fi 802.11 a/b/g, 802.11n 3T3R up to 450 Mbps
	WWAN	1x 4G modem LTE/HSPA+/GSM/GPRS/EDGE/EV-DO Rev A/1xRTT (EMEA / Australia or Americas variant)
	GPS Location Solutions	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
	Interface/resolution	DisplayPort / 1366x768@112 MHz
OPERATIONAL PLATE	Serial	2x serial ports (RS232-RS422-RS485), software configurable (insulated)
	Ethernet	2x Ethernet 10/100/1000 Mb/s, M12 X-coded 8-poles Female connectors (insulated)
	Audio Controller	Intel® High Definition Audio w/ HDMI 1.3a support
	Audio Interface	Stereo Line In, Stereo Line Out
	Digital Input	4x Inputs (sink current 10 mA, 1.5 Kv insulation)
	Digital Output	4x Outputs (open drain 24 VDC/10 mA, 1.5 Kv insulation)
	LED	1x System Power LED
	Input Power	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	1x serial port
	USB	1x USB 3.0 (Super Speed 4 Gb/s), 1x USB 2.0 (Hi Speed 480 Mb/s)
	Ethernet	1x Ethernet 10/100/1000 Mb/s
	Display	1x DisplayPort
	LEDs	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) (*)
EXTENSION		2x SIM card holders (Dual SIM support), 1x free 2.5" SATA Disk holder left
		1x mSATA using Mini PCI-Express card slot (shared with one 2.5" SATA)
SUPPORTED OS		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	EN 60950-1: 2006 +A1: 2010 +A2: 2013 + A11: 2009 +A12: 2011 . Safety Europe Directive
	Railway Safety	Supply Voltage: EN 50155: 2007. Railway
	Thermal Operating	Class Tx EN 50155 / NF EN 60068-2-1: 2007 / NF EN 60068-2-2: 2007 . Railway
	Climatic Test	Damp heat (55°C , 95% Relative Humidity), cyclic EN 50155 / NF EN 60068-2-30 Railway
	Random Vibration	Operating, Long life testing EN 50155 / NF EN 61373: 2011-04 / NF EN 60068-2-64: 2008
	Shock	EN 50155 / NF EN 61373: 2011-04 / NF EN 60068-2-27: 2009. Railway Class 1B
	EMC Emission	EN 50155 / NF EN50121-3-2 / EN 55011 [*]
	EMC Immunity	EN 50155 / NF EN50121-3-2 / EN 61000-4-2 / -4-3 / -4-4 / -4-5 / -4-6
	ECM and ERM	R & TTE (EN300328 V1.8.1)
	GSM and MS	R & TTE (EN301 511 V9.0.2)
	Radiated Emissions	R & TTE (EN301 901-1 V5)
	Others	CE. UL, WEEE, RoHS
	Environmental Protection	IP50 in Desktop position / IP51 in Wall Mounting position (NF EN 60529: 2000) [*]

[*] *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[*] 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) [*] conformal coating of internal components is optional
TRACe	TRACE-G304-TR-A	EN50155[*] fanless Gateway for Americas. Intel® Atom E3845BayTrail (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) [*] conformal coating of internal components is optional
CABLE	TRACE-KIT-CAB-EVAL	Set of Cables for TRACe™ evaluation, consisting of: ▶ 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: ▶ 1x SATA Pow cable, ▶ 1x SATA Data cable, ▶ 4x screws
CABLE	TRACE-STARTERKIT-1	Complete set of cables / accessories for TRACe evaluation, consisting of: ▶ 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-INConnector. FOR LAB USE

▶ CORPORATE OFFICES

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