

# TRACe V304-TR

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## EN50155 CERTIFIED FANLESS NETWORK VIDEO RECORDER

- ▶ Certified NVR with high connectivity for rolling stock IP video surveillance
- ▶ Intel® Atom™ E3845 (Bay Trail-I Platform) quad-core @ 1.91 GHz
- ▶ Up to 2x 2.5" removable SATA disks
- ▶ 2x LAN for IP cameras video streams
- ▶ IP50 Ingress Protection from all Directions
- ▶ EN50155 Class Tx (-40°C to +70°C / 10 min @ +85°C)

POSSIBILITIES START HERE



## ▶ PRODUCT OVERVIEW

Kontron TRACe V304-TR is an EN50155 certified fanless Network Video Recorder. This "V" version is specifically designed for rolling stock IP video surveillance. The V304-TR version is based on a COM Express® CPU module featuring Intel® Atom E3845 Bay Trail (quad-core @ 1.91 GHz). Kontron TRACe V304-TR features a wide range power supply (from 24 VDC to 110 VDC). EN50155 certified TRACe V304-TR box recorder is designed to provide high performance, high reliability and high capacity data storage in rough railway environments.

This NVR (Network Video Recorder) features three independent networks (2x LAN with M12 connectors, 1x Wi-Fi) for multiple IP cameras video streams. TRACe V304-TR embeds a soldered 8 GB SLC Flash and provides a SSD/HDD tray allowing up to two removable 2.5" SATA disks. Thus, TRACe V304-TR offers RAID 0 and RAID 1 functions for data reliability. These features enable an immediate deployment for any rolling-stock network CCTV applications.

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). On this plate, two SMA connectors allow the routing of Wi-Fi signals (antennas non-provided). To prevent unauthorized access via Wi-Fi, advanced 802.1X authentication is available to provide high network security.

General Purpose Inputs/Outputs allow to trigger recordings on the basis of input events (but also to generate output events) whereas the audio interface (Stereo Line In, Stereo Line Out) enables audio recording and transmission.

TRACe V304-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 inbox 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 V304-TR.

## ▶ TECHNICAL INFORMATION

PROCESSOR		Intel® Atom™ 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)
RECORDING	Default storage Additional data storage	2 SATA connections –for 2.5 inch HDD or SSD No disk or optional pre-certified 2.5" SSD (30 GB up to 480 GB) HDD/SSD tray for up to two removable 2.5" SATA disks
GRAPHIC CONTROLLER	Interface/resolution Video Decode	Integrated 1D/3D Graphics Engine, GMA 3650/3600, Gfx clock 640/400MHz, DirectX®9.1 DisplayPort / 1366x768@112 MHz MPEG2, Blu-Ray Disk 2.0, VC-1, H.264, WMV9 up to 1080p
OPERATIONAL PLATE	Serial Ethernet Audio Controller Audio Interface Digital Input Digital Output LED	2x serial ports (RS232-RS422-RS485), software configurable 2x Ethernet 10/100/1000 Mb/s, M12 X-coded 8-poles Female connectors Intel® High Definition Audio w/ HDMI 1.3a support Stereo Line In, Stereo Line Out , DB9 4x Inputs (sink current 10 mA, 1.5 Kv insulation) 4x Outputs (open drain 24 VDC/10 mA, 1.5 Kv insulation) 1x Power LED
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) <sup>(1)</sup>
WIRELESS	Wi-Fi Authentication Interface	802.11 a/b/g, dual-band 802.11n 2T2R up to 300 Mbps 64/128-bits WEP, WPA, WPA2, 802.1x 2x SMA connectors on rear plate (antennas non-provided)
PROTECTION CLASS		IP50 on all faces
SUPPORTED OS		Linux (Fedora 22), Windows 7, Windows Embedded Standard 8
OPTIONS		Conformal coating Industrial Grade Temperature SSDs in different sizes

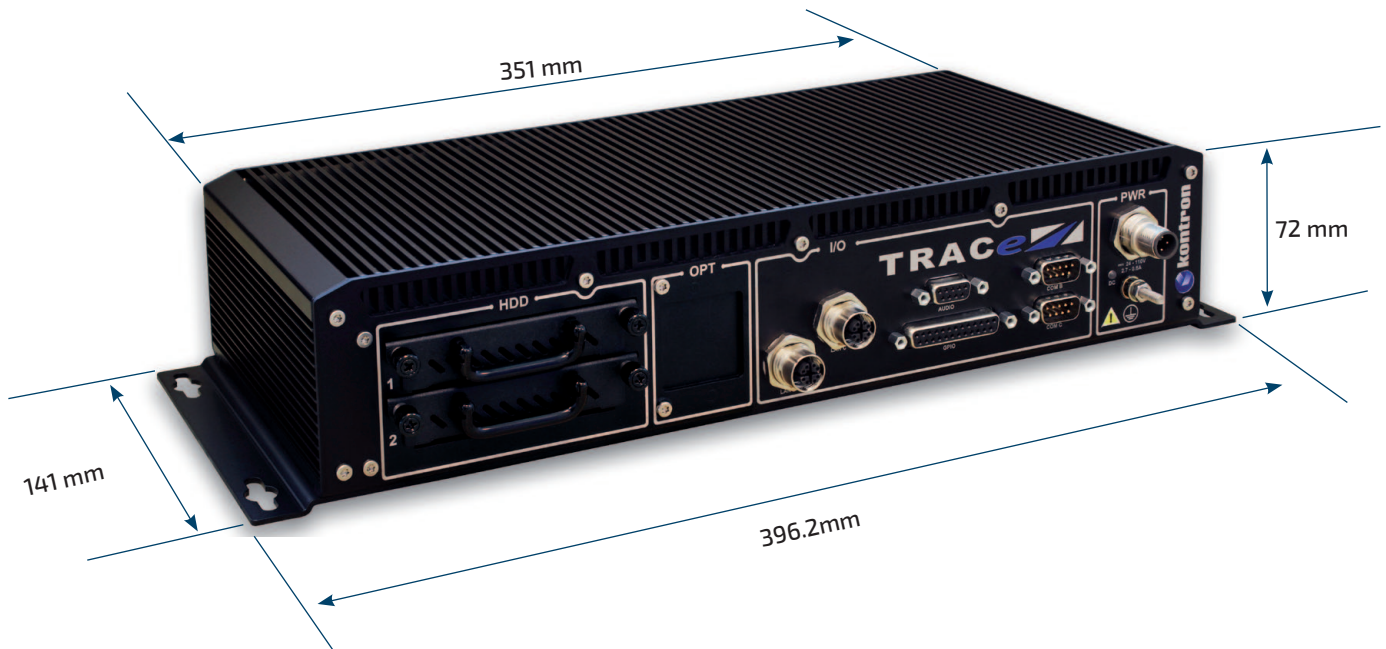
<sup>(1)</sup> Depending on hardware revision, nominal input voltage range might be limited to 24-48 VDC; please refer to "SDDTG45 - TRACe-TR Family User's Manual" for detailed information.

## ▶ ENVIRONMENTAL SPECIFICATIONS

OPERATING TEMPERATURE		-40°C up to +70°C (with 10 min at +85°C) EN50155 Class Tx
ENVIRONMENT / CERTIFICATIONS	ITE Safety Europe Railway Safety Thermal Operating Climatic Test Random Vibration Shock EMC Emission EMC Immunity 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 <sup>(*)</sup> EN 50155 / NF EN50121-3-2 / EN 61000-4-2 / -4-3 / -4-4 / -4-5 / -4-6 CE, UL, WEEE, RoHS IP50 rating (NF EN 60529: 2000) <sup>(*)</sup>

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

## ▶ DIMENSIONS



## ► ORDERING INFORMATION

ARTICLE	ORDER CODE	DESCRIPTION
TRACe	TRACE-V304-TR	EN50155 certified fanless Network Video Recorder, Intel® Atom E3845 Bay Trail (quad core @ 1.91 GHz) COMe CPU, 2 GB DDR3 with ECC, 8 GB eMMC soldered Flash, Wi-Fi 2T2R up to 300 Mbps, 2x disks tray for up to 2x removable 2.5" SATA disks. Railway certified Wide range PSU 24 VDC-110 VDC, EN50155 Class TX (-40° to 70° C / 10min @ 85°C)
TRACe	TRACE-B304-TR	EN50155 certified fanless Operational Computer (Generic Baseline), Intel® Atom E3845 Bay Trail (quad core @ 1.91 GHz) COMe CPU, 2 GB DDR3 with ECC, 8 GB eMMC soldered Flash, OS less , 3 mPCIe slots, Railway certified Wide range PSU 24 VDC-110 VDC, EN50155 Class TX (-40° to 70° C / 10min @ +85° C)
TRACe	TRACE-B314-TR	EN50155 certified fanless Operational Computer (Generic Baseline), Intel® Atom E3845 Bay Trail (quad core @ 1.91 GHz) COMe CPU, 2 GB DDR3 with ECC, 8 GB eMMC soldered Flash, OS less , 3 mPCIe slots, Railway certified Wide range PSU 24VDC-110VDC, EN50155 Class TX (-40° to 70° C / 10min @ +85° C), USB on M12 connector, IP54
TRACe	TRACE-G304-TR	EN50155 certified fanless Gateway, Intel® Atom E3845 Bay Trail (quad core @ 1.91 GHz) COMe CPU, 2 GB DDR3 with ECC, 8 GB eMMC soldered Flash, Wi-Fi 802.11 a/b/g/n 3T3R up to 450 Mbps, 3G/4G/GNSS, 128 GB SSD MLC I-TEMP, Railway certified wide range PSU 24 VDC-110 VDC, EN50155 Class TX (-40° to 70° C / 10min @ 85°C)
TRACe	TRACE-M304-TR	EN50155 certified fanless Management Computer, Intel® Atom E3845 Bay Trail (quad core @ 1.91 GHz) COMe CPU, 2 GB DDR3 with ECC, 8 GB eMMC soldered Flash, MVB Class 1 : Process Data + Bus Administrator, Wi-Fi 802.11 a/b/g/n 2T2R up to 300 Mbps, 128GB SSD MLC I-TEMP, Railway certified Wide range PSU 24 VDC-110 VDC, EN50155 Class TX (-40° to 70° C / 10min @ 85°C)
CABLE	TRACE-KIT-CAB-EVAL	Set of Cables for TRACe™ evaluation, consisting of: <ul style="list-style-type: none"> <li>► 1x Cable ASSY - Power (M12-A coded to free end),</li> <li>► 1x Ethernet (M12-X coded to RJ-45),</li> <li>► 1x Serial (RJ-12 to dual DB9)</li> </ul> (see TRACe-TR Family User's Manual)
CABLE	TRACE-KITSATA-1	Set of SATA cables to install one 2,5" SSD on TRACe™, consisting of: <ul style="list-style-type: none"> <li>► 1xSATA Pow cable,</li> <li>► 1x SATA Data cable,</li> <li>► 4x screws and spacers</li> </ul>
CABLE	TRACE-STARTERKIT-1	Complete set of cables / accessories for TRACe evaluation, consisting of: <ul style="list-style-type: none"> <li>► 1x AC/DC converter cable assembly for DC-IN</li> <li>► 1x USB Key Fedora 22 TRACe Live Image</li> <li>► 1x M12 to RJ-45 Ethernet Cable</li> <li>► 1x DisplayPort to VGA adapter</li> <li>► 1x Serial cable (RJ-12 to dual DB9: CPU_A, CPU_B) : 1x KIT-2X-RJ12DB9</li> <li>► 3x Wi-Fi antennas Dual Band 2,4 GHz-5 GHz ,</li> <li>► 2x 3G/LTE antennas 5 dBi,</li> <li>► 1x GPS antenna</li> </ul>
COVER PLATE	TRACE-KITMT-1-V01	Maintenance Cover Plate for Dust & Water Protection

## ► CORPORATE OFFICES

### EUROPE, MIDDLE EAST & AFRICA

Lise-Meitner-Str. 3-5  
86156 Augsburg  
Germany  
Tel.: + 49 821 4086 0  
Fax: + 49 821 4086 111  
info@kontron.com

### NORTH AMERICA

14118 Stowe Drive  
Poway, CA 92064-7147  
USA  
Tel.: + 1 888 294 4558  
Fax: + 1 858 677 0898  
info@us.kontron.com

### ASIA PACIFIC

1~2F, 10 Building, No. 8 Liangshuihe 2nd Street,  
Economical & Technological Development Zone,  
Beijing, 100176, P.R.China  
Tel.: +86 10 63751188  
Fax: +86 10 83682438  
info@kontron.cn