

Understanding TRACe™

Long term invariability

Kontron understands the need to provide technology that enables continued advancements, expansion and long-term value. This is why all elements of the TRACe™ family existing today as well as future TRACe™ generations based on new silicons are designed for long term invariability. Stability is guaranteed in the mechanical domain, as well as the health management and operational interfaces to guarantee our customers several decades of deployment, independently of the abrupt changes in the silicon industry.

Short route to deployment: pre-defined profiles

TRACe™ computers exist in different pre-qualified profiles, each of which being geared towards a given set of application requirements (Management computer, Video surveillance, Communication gateway, Passenger information). With this approach, customers rely on off-the-shelf, certified computers, backed up by Kontron warranty and services, to rapidly deploy new infrastructures which run new revenue generating applications.

Solid baseline for specific needs: integrator-friendly version

TRACe B304-TR computer is the certified rolling-stock computer generic profile. Kontron designed this model for integrators aiming at rapidly deploying new concepts and applications. This model has a specific documentation set and key design guidelines to successfully insert new components in its modular structure. OEMs, Integrators and Operators alike will find with the TRACe B304-TR model a solid off the shelf baseline for all new developments and deployments.

TRACe™ unique baseline, multiple products and applications: Displays

Future TRACe™ products include passenger and driver displays, all based on the very same electronics building blocks as the current TRACe™ computers.

TRACe™ saves cost on development, certification and maintenance costs

All TRACe™ rely on the same set of modular building blocks and APIs. Health management concepts, APIs, component selection and tracking are common to all products, from computers to displays, allowing a simplified set of certification artifacts, that can be reused across TRACe™ based equipments fulfilling multiple missions on a given platform. Long term invariability also facilitates platform mid-life retrofits, since new TRACe™ equipments can easily be mixed with previous generation of TRACe™.



About Kontron

Kontron is a global leader in embedded computing technology. With more than 40% of its employees in research and development, Kontron creates many of the standards that drive the world's embedded computing platforms. Kontron's product longevity, local engineering and support, and value-added services, helps create a sustainable and viable embedded solution for OEMs and system integrators.

Kontron works closely with its customers on their embedded application-ready platforms and custom solutions, enabling them to focus on their core competencies. The result is an accelerated time-to-market, reduced total-cost-of-ownership and an improved overall application with leading-edge, highly-reliable embedded technology.

Kontron is listed on the German TecDAX stock exchanges under the symbol "KBC". For more information, please visit: www.kontron.com



Kontron is a global leader in embedded computing technology in the transportation market. Kontron provides application-ready platforms and custom solutions for Train Management System, Interlocking and Control Center, Internet on Train / Passenger Information, Video Surveillance and In-Vehicle applications. Customers benefit from the reliability and long-term availability of Kontron's wide product portfolio of certified solutions. Kontron has achieved the IRIS (International Railway Industry Standard) Revision 02 certification, attesting that its dedicated railway facility complies with international united quality standards and fulfils the highest demands for reliability and lifecycle management of the railway industry.

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» TRACe™ «

EN50155 Transportation
Computer Family

TRACe™ Transportation Computer Family

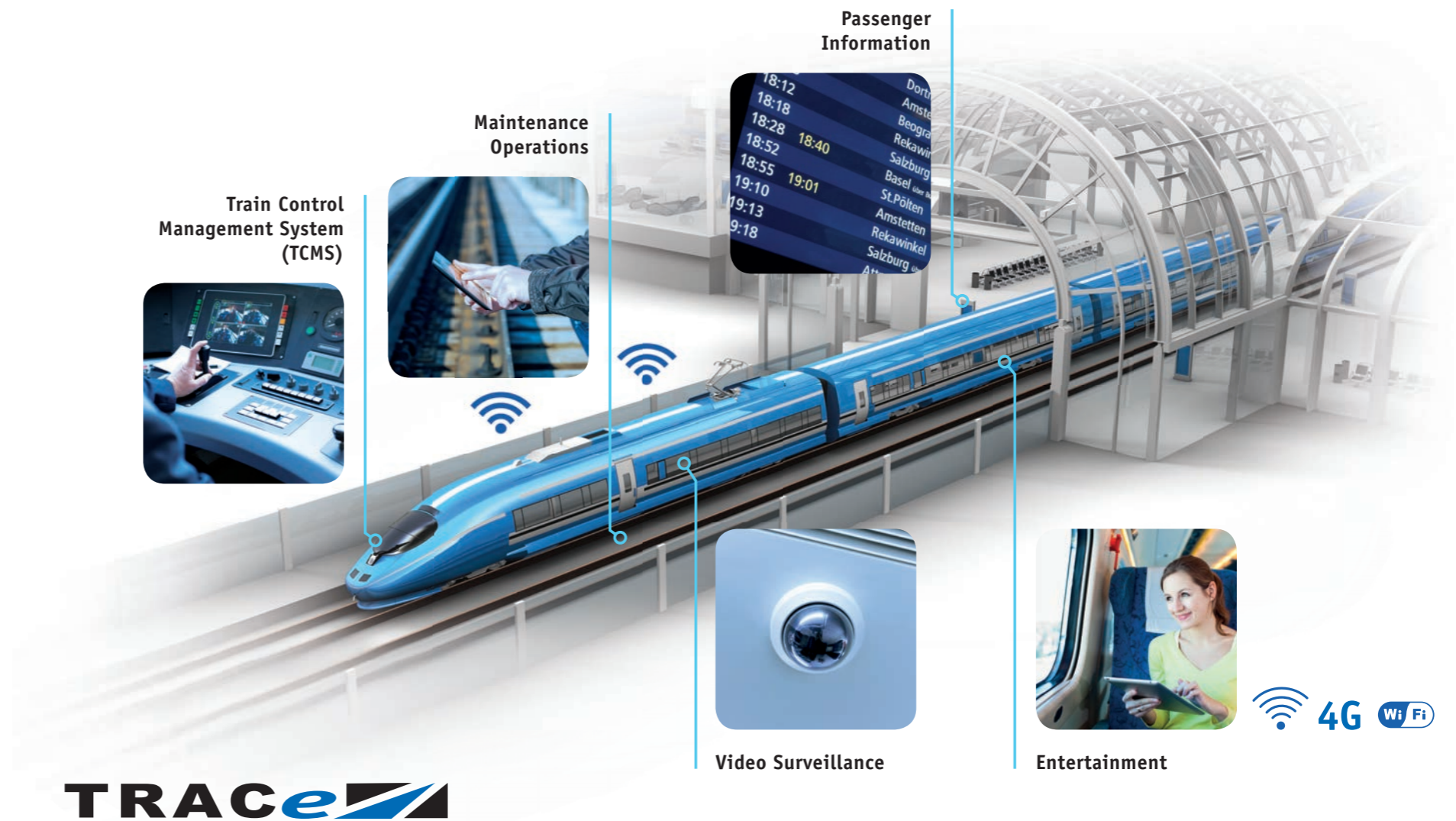
TRACe™ product line addresses the broadest range of modern connected rolling-stock applications through pre-certified, application-oriented computer profiles:

- » Video Recording and Distribution (Storage, Processing)
- » Communication Gateways (WiFi, 3/4G)
- » Train Communication Network End Point (Management, Monitoring)

TRACe™ is also a generic baseline for integrators to deploy specific variants for specialized applications with custom needs. This baseline is dedicated to system designers seeking the cheapest route to deployment. Numerous add-ons have already been qualified with the TRACe™ baseline and offer a wide and solid foundation to build future proof solutions. See back page for an overview of the complete TRACe™ concept.

Key Features/Benefits

- » EN50155-certified (EMC, EMI, Climatic, shock and vibrations)
- » Fanless rugged design (Passive cooling)
- » Op. temp EN50155 Class Tx (-40°C up to +70°C with 10 min at +85°C)
- » IP 54 from all directions
- » Operational I/O side (M12 connectors, insulated) separated from Maintenance connectors on the other side
- » Intel® Atom™ E3845 quad core @ 1,9GHZ
- » 2 GB DDR3 with ECC, 8 GB soldered Flash SLC
- » Rail wide range 24VDC-110VDC (14,4VDC up to 154VDC)
- » 3x mini PCI-Express sockets
- » Up to two 2.5" SATA disks (HDD/SSD)
- » GPIO, Audio, Display Port, RS232/422/485



TRACe M304-TR
Rolling-Stock Management Computer

- » MVB interface for train control and monitoring applications
- » 2 Gigabit Ethernet LAN + (2T2R) WLAN 802.11 a/b/g/n
- » Can act as a MVB/LAN/Wi-Fi gateway



TRACe V304-TR
Network Video Recorder

- » For rolling stock IP video surveillance
- » 16x H.264 IP cameras video streams @ 1Mbps
- » 2 SATA 2.5" drives, RAID0, RAID1, Removable Tray



TRACe G304-TR
Certified Gateway

- » For telemetry, station and train control or infotainment applications
- » 2 Gigabit Ethernet LAN + enhanced (3T3R) WLAN 802.11 a/b/g/n
- » WWAN 2G/3G/4G/LTE (dual SIM) for LTE/HSPA+/GSM/GPRS/EDGE/EV-DO
- » Supports GPS location solutions on 4G modem: A-GPS, gps XTRA and Glonass



TRACe B304-TR
Generic Operational Computer Integrator-friendly Baseline

- » Open slots for flexible I/O connectivity
- » Modular construction (accepts custom faceplate, I/O panels or PSUs)
- » Designers' kit (documents, test programs)