Standard and Custom

END-TO-END IOT SOLUTIONS

from Sensor to Edge to Cloud

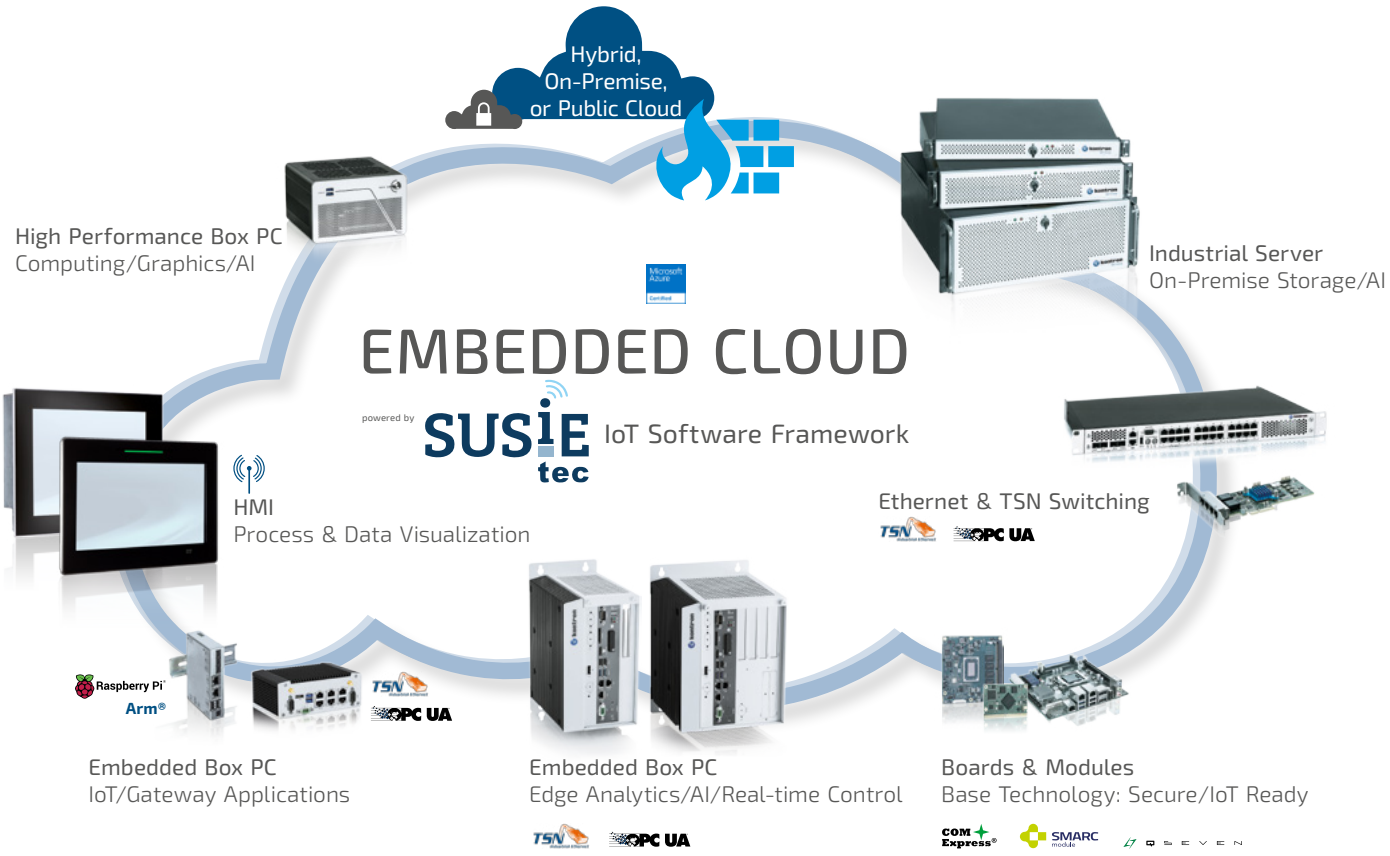
- Embedded Cloud
- Embedded Software
- Embedded Systems
- Embedded Boards & Modules
- Embedded ODM Services

- **BEYOND THE STANDARD:**
  Complete and integrated portfolio of hardware, software and services
- **ACROSS THE WORLD'S LEADING INDUSTRIES:**
  Pushing the boundaries of possibilities
- **LOOKING BEYOND THE SURFACE:**
  IoT-ready platforms – driving your embedded cloud

POSSIBILITIES START HERE kontron S&T Group

IIOT/INDUSTRY 4.0

Standard and Custom
End-to-End IoT Solutions
from Sensor to Edge to Cloud



"Our understanding of IoT is not just connecting devices and sensors and store as much data as possible. It is about smart applications that make use of the data to improve processes and efficiency as well as reducing environmental resources and costs."

BOARDS & MODULES – COM Express®

COM Express® defines standardized form factors and pin-outs for Computer-on-Modules, from mini (84 x 55 mm), over compact (95 x 95 mm) to basic (125 x 95 mm). The different form factors allow the implementation of versatile computing solutions – scaling the performance and I/O support from low power, energy-efficient to high performance, comprehensive I/O interfaces.

COMe-bCL6

COM Express® basic Type 6 with 8th/9th Gen Intel® Core™/Xeon® processors

- Up to 128 GByte DDR4 non-ECC/ECC memory
- Optional NVMe SSD onboard
- Industrial grade versions
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

COMe-bBD7

COM Express® basic Type 7 with Intel® Xeon® and Pentium® D-1500 SOC processors

- Server-grade platform
- Up to 64 GByte DDR4 ECC 2x SODIMMs
- Dual 10GbE interfaces
- High-speed connectivity 24x PCIe 3.0 + 8x PCIe 2.0, 4x USB 3.0, 2x SATA3
- Industrial grade versions
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

COMe-bDV7

COM Express® basic Type 7 with Intel Atom® processors C3000 product family

- Entry server-grade platform
- Up to 128 GByte DDR4 ECC 4x SODIMMs
- Quad 10GbE interfaces
- High-speed connectivity 14x PCIe 3.0, 4x USB 3.0, 2x SATA3
- Industrial grade versions
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

COMe-cVR6

COM Express® compact Type 6 with AMD Ryzen™ Embedded V and R Series APUs

- Leading graphics performance
- Up to 4 independent display support
- Up to 24 GByte DDR4 memory (8 GByte DDR4 memory down)
- Industrial grade versions
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

COMe-cWL6

COM Express® compact Type 6 with 8th Gen Intel® Core™/Celeron® processors

- Up to 48 GByte DDR4 memory (16 GByte DDR4 memory down)
- Optional NVMe SSD onboard
- Industrial grade versions
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

COMe-mAL10

COM Express® mini Type 10 with latest Gen Intel Atom® E3900, Pentium® and Celeron® Series

- Low-power – performance/Watt optimized small form factor solution
- Up to 8 GByte DDR3L memory down (ECC/non ECC)
- 2x USB 3.0/2.0, 6x USB 2.0, 2x SATA, eMMC Flash
- Industrial grade versions
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

BOARDS & MODULES – Qseven®

The Qseven® concept is an off-the-shelf, multi vendor, Computer-On-Module that integrates all the core components of a common PC and is mounted onto an application specific carrier board. Qseven® modules have a standardized form factor of 70 mm x 70 mm or 40 mm x 70 mm and have specified pinouts based on the high speed MXM system connector.

Qseven®-Q7AMX8X
Qseven® Module with low power NXP i.MX8X processor series

- Up to 4x 1.5 GHz Cortex®-A35 + 266 MHz M4F processor
- Up to 3 GByte RAM
- Dual display support
- Up to 3x PCIe, 5x USB2.0 (1x OTG), 1x USB3.0
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

Qseven®-Q7AL
Latest Gen Intel Atom®, Pentium™ and Celeron® processor series

- Up to 8 GByte onboard DDR3L memory down (ECC/non ECC)
- Dual display support
- 2x USB 3.0, 4x USB 2.0 (1 x OTG), 2x SATA, eMMC onboard
- Industrial grade temperature
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

Qseven®-Q7AMX7
Qseven® Module with extreme low power NXP i.MX7 processor series

- Up 2x 1 GHz Cortex®-A7 + 200 MHz M4 processor
- Up to 2 GByte RAM
- Dual channel LVDS interface
- Up to 3x PCIe, 4x USB2.0
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

BOARDS & MODULES – SOM

SOM-i.MX6ULL/UL
Cost effective Application processor Power on 1 inch x 1 inch for small IoT Applications

- CPU NXP i.MX6ULL/UL (800/528 MHz)
- DDR3-RAM 512 MB
- NAND-Flash 512 MB, NOR-Flash 1 MB
- 2x Ethernet, USB, Serial, 2x CAN, I/O
- Optionally CODESYS Soft-PLC

CODESYS

SOM-STM32MP157
Triple Core Module for Graphics, Communication and Realtime Applications

- CPU STMP157 (2x Cortex®-A7, 1x Cortex®-M4)
- DDR3-RAM 512 MB
- NAND-Flash 512 MB, NOR-Flash 2 MB
- Ethernet, USB, Serial, CAN, I/O, SDIO, i²C, SPI, PWM

SOM-i.MX8M Mini
High Performance Quad Core Module for 3D Graphics and Sophisticated Software Architecture

- CPU NXP i.MX8M Mini (4x Cortex®-A53, 1x Cortex®-M4)
- LPDDR4-RAM 1 GB
- eMMC 8 GB, NOR-Flash 1 MB
- Ethernet, 2x USB, 4x Serial, I/0, 2x I²C, 1x PWM, 2x SDIO

BOARDS & MODULES – SMARC™

Low-power embedded architecture platform with 82 mm x 50 mm for Computer-on-Modules based on Arm® and X86 technology. Perfect fit for mobile, embedded, connected solutions with scalable building blocks. Optimized pin-out definition for versatile architectures. Constructed to withstand harsh industrial environments.

SMARC™-sAMX8X

SMARC™ module with low power NXP i.MX8X series processor

- Up to 4x Cortex®-A35 + Cortex®-M4 processor
- Up to 3 GByte RAM
- Dual channel LVDS interface, HDMI, DP
- Up to 2x GByte Ethernet, 3x PCIe, 6x USB 2.0, 1x USB 3.0
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

SMARC™-sAL28

SMARC™ module with NXP LS1028 Layerscape processor

- Dual-Core Cortex®-A72 on a SMARC™ short size form factor
- Up to 8 GByte DDR3L non-ECC and ECC memory down. ECC as default.
- One PCIe line can be used as QSGMII port to drive 4 1 GByte TSN capable Ethernet ports
- 3D GPU
- 2x Gigabit Ethernet, TSN capable
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

SMARC™-sXAL/SMARC™-sXAL4

SMARC™ 2.0 module based on Intel Atom® E3900, Pentium® and Celeron® processor series

- Up to 8 GByte DDR3L memory down (ECC/non ECC)/
  Up to 8 GByte LPDDR4 memory down
- Triple display support
- 2x USB 3.0, 4x USB 2.0 (alternatively 1x USB OTG), 1x SATA, eMMC onboard
- Industrial grade versions

SMARC™-sAMX7

SMARC™ Module with extrem low power NXP i.MX7 series processor

- Up to 2x 1 GHz Cortex®-A7 + 200 MHz M4 processor
- Up to 2 GByte RAM
- Dual channel LVDS interface
- Up to 2x GByte Ethernet, 3x PCIe, 4x USB 2.0
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

BOARDS & MODULES – EMBEDDED MOTHERBOARDS/SBC

Kontron's longevity motherboards follow international industry size standards with well-defined mounting holes and standard I/O bracket areas. The Embedded and Server motherboards offer up to 7 years product availability. In applications where permanence and risk avoidance must be optimized, Kontron's experience in a variety of markets leads customers to the solution that meets their critical programming and cost objectives.

mITX-APL

Embedded mITX Motherboard with Intel Atom® E39xx Series and Celeron® N3350 processor

- High performance CPU, graphics and media performance supporting up to 3 independent displays
- mPCIe full size, CAN bus and eMMC card
- SO-DIMM Sockets DDR3L-1867 Memory (up to 8 GByte)
- LVDS 24 Bits dual channel and Display Port 1.2
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

mITX-SKL-H/KBL-H

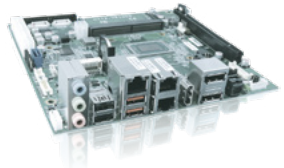
Embedded mITX Mobile Motherboard with Intel® CM236, 6th/7th Gen 14nm Intel® Xeon® E3, Quad Core™ i7/i5 and Celeron® processor

- Mobile Class high performance CPU, graphics, and media performance supporting 3 independent displays
- SO-DIMM Socket DDR4-2133 Memory (up to 32 GByte)
- 1x Mini-PCIe with USB 2.0/PCI/SATA and external to SIM
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

mITX-CFL-S

Mini-ITX Industrial Motherboard with Intel® 9th Gen Series processors

- 1x eDP, 1x HDMI, 2x DP for display output
- 3x GbE LAN for Ethernet
- Up to 6x USB 3.1, up to 4x USB 3.0, 4x USB 2.0, 2x RS232/422/485, 2x RS232, 1x 8-bit DIO
- 2x SATA for storage
- 1x PCIe x16, 1x M.2 Key M, 1x M.2 Key A, 1x M.2 Key B for expansion



mITX-VR1000

Mini-ITX Industrial Motherboard with AMD Ryzen™ V1000 Series and R1000 Series processors

- 1x LVDS, up to 2x DP, 1x HDMI 1.4 for display output
- Up to 3x GbE LAN for Ethernet
- 2x USB 3.1, 4x USB 2.0, 1x RS232/422/485, 1x RS232, 18-bit GPIO for peripherals
- 1x SATA 3.0 for hard drive
- 1x PCIe, 1x M.2 Key B, 1x PCIe x16 for SSD, wireless & application-specific expansion

BOARDS & MODULES – EMBEDDED MOTHERBOARDS/SBC

FlexATX-SKL-S/KBL-S-C236

Embedded FlexATX Desktop Motherboard with 6th/7th Gen 14nm Intel® Xeon® E3 and Quad Core™ i7/i5/i3 processor

- High performance CPU, graphics, and media performance supporting up to 3 independent displays
- Long term available Embedded FlexATX Desktop Class Motherboard
- mPCIe, M.2 socket and PCIe expansion slots (1x16, 1x4, 1x1)
- Direct X12, Open GL 4.4
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

3.5-SBC-APL

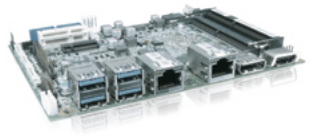
3,5" Embedded Single Board Computer with Intel Atom® E39xx series and Celeron® N3350 processor

- Intel Atom® E39xx and N3350 SOC (2 or 4 cores), TDP: 6-12 W
- LVDS 18/24 Bit dual channel/ Display Port 1.2/HDMI
- SO-DIMM Socket DDR3L-1867 Memory (up to 8 GByte)
- eMMC NAND Flash build-in
- 2x RJ-45 LAN Port
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

3.5"-SBC-KBL-U

3,5“ Embedded Single Board Computer with Intel® 7th Gen 14nm Dual Core i3/i5/i7 and Celeron® 3965U processor

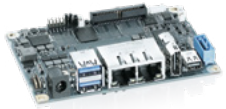
- High performance CPU, graphics, and media performance supporting up to 3 independent displays
- 1x LVDS, 1x HDMI 2.0, 1x DP for display output
- 2x GbE LAN for Ethernet
- 4x USB 3.0, 2x USB 2.0, 2x RS232/422/485, 1x 8-bit DIO for peripherals
- 2x SATA 3.0 for storage
- 1x mPCIe, 1x M.2 for expansion



pITX-APL V2.0

Embedded pITX Motherboard with Intel Atom® E39xx Series and Celeron® N3350/J3455 SOC CPUs

- Intel Atom® E39xx and N3350/J3455 SOC (2 or 4 cores), TDP: 6-12 W
- M.2 Slot Connecor and two Gigabit Ethernet Ports
- Soldered down LPDDR4 memory (up to 16 GByte)
- TPM 2.0 and optional Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®
- Mini Display Port and HDMI for best graphics



pITX-iMX8M

Embedded pITX Motherboard with NXP's Dual Core™ or Quad Core™ processors based on Arm® Cortex®-A53

- High performance CPU, graphics, and media performance supporting up to 3 independent displays
- Long term available Embedded FlexATX Desktop Class Motherboard
- mPCIe, M.2 socket and PCIe expansion slots (1x16, 1x4, 1x1)
- Direct X12, Open GL 4.4
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

Raspberry Pi

Customized 4.3" module for industrial applications

- Standard Technology
- High grade of customization
- Quick migration from the Pi prototype to industrial serial product
- Heavy duty interfaces for rough industrial environment
- Using industrial TFT Displays with LVDS
- 24 V power supply

MOTHERBOARDS – DESIGNED BY FUJITSU

Kontron's wide range product portfolio of Motherboards "Designed by Fujitsu" are applicable in many verticals like KIOSK/POS/ Ticketing, Medical Equipment, Video Surveillance, Digital Signage, Industrial Automation as well as Gaming and Gambling. Due to different customer requirements, Kontron features two motherboard families: Motherboards of the Extended Lifecycle Series ("-B/-G") are available up to 3 years. Motherboards of the Industrial Series ("-S") have a lifecycle of max. 7 years.

D3646-S ATX

Intel® C246 Express Chipset and Intel® Xeon®/Intel® 8th/9th Gen Core™ i3/i5/i7/i9 processors

- cTDP – Flexible reduction of CPU TDP
- Dual LAN, 4x COM, GPIO & 2x PCI
- M.2 SSD & M.2 WLAN Slots onboard
- HW Watchdog
- Powerful USB 3.1 Gen2

D3641-S µATX

Intel® C246 Express Chipset and Intel® Xeon®/Intel® 8th/9th Gen Core™ i3/i5/i7/i9 processors

- cTDP – Flexible reduction of CPU TDP
- Supporting Intel® AMT 12.0 / vPro
- Dual LAN, 4x COM, GPIO
- M.2 SSD & M.2 WLAN slots onboard
- Powerful USB 3.1 Gen2

D3633-S mITX

Intel® Q370 Express Chipset and Intel® 8th/9th Gen Core™ i3/i5/i7/i9 processors

- cTDP – Flexible reduction of CPU TDP
- Supporting Intel® AMT 12.0 / vPro
- Dual Channel LVDS & eDP
- M.2 SSD & Mini-PCIe Socket onboard
- ATX PSU or Single 12 V Supply

D3664-B mSTX

Intel® Q370 Express Chipset and Intel® 8th/9th Gen Core™ i3/i5/i7/i9 processors

- cTDP – Flexible reduction of CPU TDP
- Ultra-small Platform supporting Intel® AMT 12.0
- HDMI V1.4 and DP V1.2
- M.2 SSD & M.2 WLAN slots onboard
- Powerful USB 3.1 Gen2

D3544-S mSTX

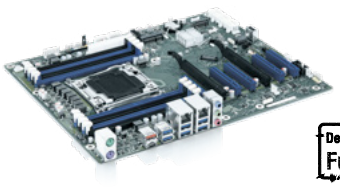
Intel® Celeron® processor J4005/J4105 & Intel® Pentium® Silver processor J5005

- Dual DP V1.2a, LVDS, eDP
- M.2 SSD & M.2 WLAN Slots onboard
- HW Watchdog & GPIO
- WideRange DC Power Supply 8 V-24 V
- Designed for Fanless Operation

D3598-B/G ATX

Intel® C422 Chipset & Intel® Xeon® W21xx/22xx processors and Intel® X299 Chipset & Intel® Core™ i7/i9 processors

- 2x PCIe x16
- Intel® VROC Support
- Dual LAN & Mini-PCIe
- HW Watchdog
- Powerful USB 3.1 Gen2 Type C



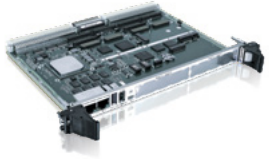
BLADES - CPCI

VME remains a strong solution for a wide variety of tech refresh programs. Kontron continues its investment in evolving a fully-featured VME product line, available in natural/forced air-cooled or rugged conduction cooled.
Kontron offers one of the broadest portfolios on CompactPCI® boards and Platforms in the market.
Choosing from scalable 3U or 6U boards, you can configure your CompactPCI® Platform to your application needs.

VM6062/VM6064

6U VME Server-Class Blade Computer for intensive data and signal processing in harsh environment

- Dual- and quad-core Intel® Xeon® processor D-1500 Product Family
- Dual 1 Gb Ethernet, USB 3.0, HDMI, COM ports on front
- Dual PMC/XMC, Dual M.2 and mPCIe sockets
- Extended Life Cycle and Silicon Reliability



CompactPCI® CP3005-SA

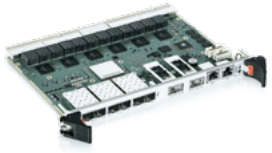
3U CompactPCI® CPU Board with 8th/9th Gen Intel® Core™ and Xeon®

- More performance-per-watt with up to 6 cores
- Long term programs: 10 years or more
- Expansions for I/O, storage, XMC, M.2 flash
- Rugged VITA47 EAC3, -40 °C to 70 °C
- Intel® Celeron® Value version
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

CompactPCI® CP6940

Fully Managed Layer 2&3 1/10/40 GbE Switching & Routing

- For long term programs and harsh environments
- PICMG2.16 and VITA31.1
- QSFP+, SFP+, SFP, RJ45 uplink options
- Optimized for multicast traffic
- Layer 2 only value version
- European design and production



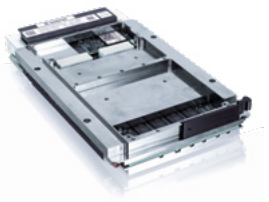
BLADES – VPX

VPX is particularly suited for 10G/40G Ethernet or PCI Express® parallel computing, in systems where small size, weight, power and cost (SWaP-C) are critical such as in many aerospace and defense applications, but also in the design of redundant architecture for critical applications. Kontron markets a full range of 3U and 6U VPX blade products and systems with Long Term Supply services.

VX305C-40G/VX305H-40G

3U VPX 12-Core Intel® Xeon® processor

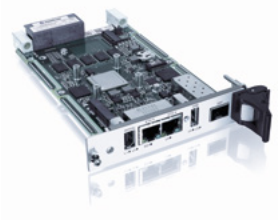
- 40 Gigabit Ethernet Data Plane
- Dual 10 Gigabit Ethernet Control Plane
- Up to 32 GByte soldered DDR4 with ECC
- Designed for I/O intensive (VX305C-40G) and Compute intensive (VX305H-4G) work-loads in Open System Architecture systems
- Extended Life Cycle and 10-year Silicon Reliability



VX3106

3U VPX Low Power Network Blade SBC

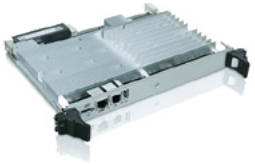
- Quad Core™ 12 GHz 64bit Arm®-A72 processor
- High Performance Neon SIMD Co-processor and Double Precision FPU
- 6x 1 Gb ETHERNET Ports
- High Capacity Storage
- Low Power, fit for Natural Convection
- 10 year Long Term Supply and Support



VX6090

6U VPX Multi-Processing Board Designed for Imaging, Radar and Embedded Server Applications

- Dual 12-Core (or 8-Core) Xeon® D 64-bit SoC at 2.0 GHz
- 16 GByte DDR4 memory with ECC per SoC soldered on PCB
- Connectivity: Multiple 10 G & 1 G Ethernet Ports
- M.2 SATA III SSD Sockets
- Extended Life Cycle and Silicon Reliability



SYSTEMS - INDUSTRIAL RACKMOUNT PC/SERVERS

Kontron's industrial rackmount systems and servers are designed and tested for challenging environments, and are therefore the perfect fit in extreme temperature and mechanical stress conditions. Efficient thermal concepts, customizable designs, high performance computing and graphics power enable 24/7 operation for high-end applications as machine learning and AI.

KISS V3 Family 1U/2U/4U
Scalable Rackmount Systems for Challenging and Noise Sensitive Environments

- Industrial grade for challenging environments – robust, reliable and sustainable
- High processing capability with 8th Gen Intel® Core™ i3/i5/i7 or Xeon® E3
- Low noise level
- Modular concept for easy customization

KISS 4U V3 SKW
High Performance Rackmount System for Challenging Environments

- High processing capability with Intel® Xeon®-W processors
- Industrial grade for challenging environments – robust, reliable and sustainable
- Modular and flexible concept for easy customization
- Long-term availability (5+ years)

KISS 4U V3 SKX
High Performance Rackmount System for AI Applications

- High computing power with Dual Intel® Xeon® SP processors for real-time analysis
- Up to 3 double width high-end GPU cards for training algorithms or inference (e.g. NVIDIA® TESLA® V100, NVIDIA® T-4 GPU)
- Extended storage possibilities with up to 8 x 2.5" storage trays
- NVMe interface for connecting SSDs via PCIe

SYSTEMS – INDUSTRIAL HIGH PERFORMANCE BOX PC

The KBox B- and C-series are designed to meet high performance requirements. The C-series is a perfect fit for demanding control cabinet applications, whereas the B-series fits into desktop and control room applications. The B- and C-series offer a broad range of interfaces and storage capabilities with RAID functionality as an option.

KBox B-201-CFL/B-202-CFL
High Performance Desktop PC with Wide Extension Capabilities

- High processing capability: 8th Gen Intel® Core™ i7/i5/i3
- Small form factor with mITX motherboard
- Removable 2.5" SSD
- Raid functionality with up to four storage devices optional
- Two PCIe expansion slots for graphics or network cards
- Long term availability (5+ years)
- Security onboard for TPM 2.0 and Kontron APPROTECT based on Wibu-Systems CodeMeter®

KBox C-103-CFL-x
Industrial Box PC for Control, Inspection & Data Collection

- Based on latest 8th/9th Gen Intel® Core™ or Xeon® E for demanding applications
- Highest system availability: Fanless up to 70 °C, redundant PSU option, recovery button, goldcap backup
- Optimized for control applications: Fieldbus integration & NVRAM option
- High flexibility and expandability: Up to 4x PCIe Slots, mPCIe & M.2, 4x GbE, 6x USB, up to 3x DP ...

SYSTEMS – INDUSTRIAL BOX PC/GATEWAYS

The KBox A-series is designed for a variety of applications in the industrial environment. It comprises intelligent IoT gateways for edge analytics or remote monitoring as well as systems for control and process optimization. All systems feature a fanless design which ensures a significantly prolonged lifespan and high system availability.

KBox A-250
Industrial Box PC for IoT Gateway Applications

- Intel Atom® x5-E3930/E3940/E3950 processor
- Based on a pITX-2.5" SBC with excellent price/performance ratio
- Intelligent IoT gateway for edge analytics, data collection, remote monitoring
- WiFi, GSM and LTE option available
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

KBox A-203
Industrial Box PC for IoT Gateway Applications

- Intel Atom® x5-E3930 processor
- Intelligent IoT gateway for edge analytics, data collection, remote monitoring
- Maintenance-free operation
- Broad range of interfaces and expansion capabilities
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

KBox A-230-LS
Industrial Box PC for Networks with TSN Capability

- NXP Dual Cortex®-A72 LS1028 processor
- 4x 10/100/1000 MBit ETH TSN Switch ports (2500 MBit support on request)
- 1x 10/100/1000 MBit TSN CPU port and 1x GbE ETH
- Up to 4 GByte DDR3L memory
- Maintenance-free operation
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

KBox A-150 Series
DIN RAIL Industrial Box PC for Control & Process Optimization

- Scalable performance from Intel Atom® Quad Core™ up to 7th Gen Intel® Core™ i5 processors
- Fanless, flexible DIN RAIL mounting, turnable heatsink optional
- Broad range of interfaces and expansion capabilities
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

KBox A-330-RPI
Industrial Box PC with Raspberry Pi for Gateway Applications

- Broadcom® BCM2837 Quad Core™ Arm® processor
- Huge software community, various OS supported
- Secure software stacks and management software on project request

KBox A-330-MX6
Industrial Box PC for Control & Gateway Applications

- Based on NXP i.MX6 Dual Core™ Arm® processor
- Industrial grade, 10 years availability
- Optionally CODESYS PLC, EtherCAT, PROFINET, Modbus, CAN
- Secure software stacks and management software on project request

SYSTEMS – INDUSTRIAL PANEL PC/MONITORS/WEB PANELS

Kontron's Panel PCs, Monitors and Web Panels offer a wide range of processor capacities and display sizes. Displays in wide-screen or regular format from 7" to 75" and touch functionalities (PCAP or resistive or IR) increase intuitive usability. Kontron's industrial HMIs are ready-to-run systems with flexible mounting and customization options which meet the toughest industrial requirements concerning shock, vibration and temperature resistance.

FlatClient/FlatView

Industrial HMI – Flexibility in Size, Format and Performance

- Display sizes in regular or wide format (10.1" – 23.8")
- Front options: PCAP touch, resistive touch or protection glass
- Panel PC: ECO version (Intel® Celeron® Quad Core™) and PRO version (Intel® Core™ i5)
- Industrial grade – robust, reliable, versatile and maintenance-free
- Flexible mounting options: Built-in version or stand-alone/VESA in a full metal housing

FlatClient HYG

Industrial HMI with IP69K for Environments with High Hygiene Standards

- Designed for high hygiene standards following EHEDG guidelines
- Stainless steel housing with IP69K protection (support arm version)
- Suited for washdown applications (e.g. high-pressure cleaning)
- Scalable performance from Intel Atom® to Intel® Core™ i5
- Smooth, seamless display surface for perfect cleanability

FlatClient/FlatView XXL

Industrial HMI with large-screen - a new Dimension of Visualization

- Display sizes 32" - 75" with/without touch
- Full-HD or Ultra-HD resolution
- Industrial grade (IP54) - robust, reliable, versatile and maintenance-free
- Anti-glare, scratch-proof front glass
- Monitor and Panel PC (ECO: Intel® Celeron® Quad Core™/PRO: Intel® Core™ i5)
- Long term availability and reliable 24/7 operation

Open Frame FS Monitor

Open Frame Industrial Monitor for Cost Effective Easy Integration

- Industrial grade - robust, reliable, versatile and maintenance-free
- Light-weight open frame monitor for easy installation in existing fronts
- TFT LCD display: 15"/17"/19"
- Modular configuration, e.g.:
  Touch Screen: capacitive, resisitive or protection glass
  Front: diverse options, e.g. aluminium, stainless steel, for 19" rackmount etc.

Control Panel CP

Innovative Multi Touch Control Panel with Scalable Performance

- Capacitive multi-touch control panel in high quality design
- Various display dimensions with high resolution: 7", 10.1", 15.6"
- Arm® NXP i.MX6 single or dual Core CPU
- IP65 aluminium front bezel, opt. stainless steel
- Easy customization with standard building blocks
- Scalable computing performance and interfaces
- CODESYS Soft-PLC, various fieldbuses

Web Panel WP

Innovative Multi Touch Web Panel with Scalable Performance

- Capacitive multi-touch web panel in high quality design
- Various display dimensions with high resolution: 7", 10.1", 15.6"
- Arm® NXP i.MX6 single or dual Core CPU
- IP65 aluminium front bezel, opt. stainless steel
- Easy customization with standard building blocks
- Scalable computing performance
- High performance HTML5 browser and option for a sleek MicroBrowser by iniNet

SOFTWARE & SOLUTIONS

Kontron offers a wide range of standard software as well as platform solutions for the complete Industrial Internet of Things (IIoT) infrastructure from a single source.
Ranging from standard and custom BIOS versions up to offering completely integrated platforms for edge and cloud applications, Kontron provides specifically customer-tailored solutions such as:

AI-Servers with high-end GPU cards

Powerful hardware and software components are essential for AI solutions to fulfill their role as system-critical applications in any industry. The systems have to analyze terabytes of data in a short time. The computing power required for parallel processing is provided by multicore CPUs based on neural chips. Above all, however, it comes from the graphics processing units (GPUs),e.g. NVIDIA® TESLA® V100, NVIDIA® T-4 GPU. GPUs are the processors today that provide the necessary processor power for deep learning, machine learning and inferencing.

KISS 4U V3 SKX-AI for Deep Learning, Machine Learning, and Inferencing with Dual Intel® Xeon® SP processors and high-end GPUs

- Real-time parallel processing
- Installation of up to 3 double width high-end GPU cards for training algorithms or inference (e.g. NVIDIA® TESLA® V100, NVIDIA® T-4 GPU)
- Easy server configuration and scalability
- Extended storage possibilities with up to 8 x 2.5" storage trays
- Low server noise emission
- High security and reliability
- Supports Intel® Rapid Storage Technology enterprise option RAID 0/1/10/5
- Long term availability (+ 5 years)

Security in hardware and software within the IoT

Kontron addresses the need for security with a holistic approach, targeting all security layers of an embedded system like

- Secure Boot
- Secure Operating Systems
- Application Level Security with Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

Device Monitoring for device integration and management

Knowing the sensor status and system's health is key for machine control and predictive maintenance scenarios. Kontron offers complete and secure software packages for edge and cloud computing.

Starter Kits for out-of-box experience

LoRaWAN Starter Kit

- Out of the box - plug and play sensor and cloud solution
- Including Industrial LoRaWAN gateway, capable to connect thousands of sensors
- Easy integration of additional sensors
- Dashboard and server access, everything included out of one hand

IoT Starter Kit

- Out of the box – sensor I/O solution based on Microsoft Azure
- Configure and quickly access remote I/O
- Scalable hardware starting on ESP based sensors, over Raspberry Pi, NXP IMX6 to Intel® based x86 servers
- Dashboard and server access, everything included out of one hand

SUSiEtec for custom solutions

Within Industry 4.0 applications, the IoT framework SUSiEtec integrates edge and cloud infrastructures, connecting all the components and providing analysis and processing of the data generated. SUSiEtec enables companies to adopt a hybrid, scalable approach to their IoT scenarios combining the advantages of an on-premise solution with professional services and cloud infrastructures. The modular framework can be customized to flexibly fit the requirements of different applications and adapts to existing automation solutions.

TIME SENSITIVE NETWORKING

Time Sensitive Networking (TSN) is a set of international standards (IEEE-802.1 TSN), based on Ethernet, which should lead into a standardized, converged, Industrial Ethernet for both the needs of a classical IT environment and the operational fieldbus area. The benefits are obvious and will span across a simplified network infrastructure, lower product cost and even introducing virtual networks and server infrastructure.

In order to address these new opportunities, Kontron has developed the PCIe-0400-TSN, a PCI Express® based Network Interface Card (NIC) with TSN support to implement time-critical applications, as well as a starterkit consisting of a KBox C-102-2 and the TSN NIC as an extension solution for standard industrial PCs, enabling an easy entry into TSN.

PCIE-0400-TSN
PCIe Network Interface Card with integrated TSN switch

- Connects directly to a redundant TSN ring-, line- or star network
- IEEE-802.1 TSN compliant
- Industrial grade, half size, low profile

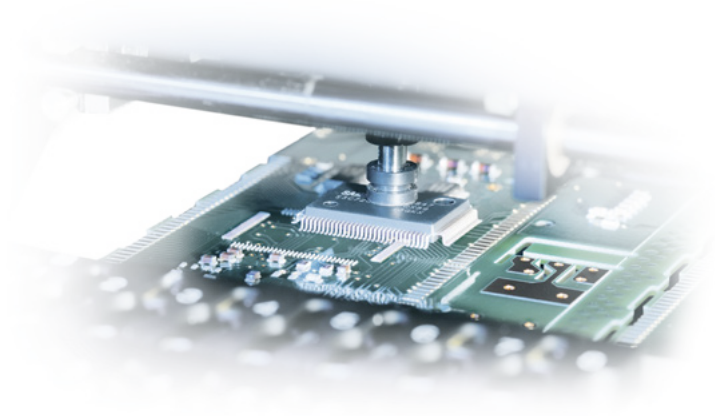
KBox A-230-LS
Industrial Box PC for Networks with TSN Capability

- NXP Dual Cortex®-A72 LS1028 processor
- 4x 10/100/1000 MBit ETH TSN Switch ports (2500 MBit support on request)
- 1x 10/100/1000 MBit TSN CPU port and 1x GbE ETH
- Up to 4 GByte DDR3L memory
- Maintenance-free operation
- Kontron APPROTECT security solution based on Wibu-Systems CodeMeter®

KBOX C-102-2 TSN
TSN Starterkit

- Pre-installed TSN platform for Industrial Automation
- Intel® Core™ i5 based KBox C-102 dual slot system
- 1st slot with PCIe-0400-TSN Network Interface Card, 2nd slot free for expansion
- Easy integration of devices into TSN network

EMS - ELECTRONIC MANUFACTURING SERVICES



- Production in DACH, East Europe and Asia
- Boxbuilding from PCBA to System
- Low Volume - High Mix/High Volume
- Certifications for IEC 13485; UL; ATEX; Apple MFi
- Product & Cost Analysis
- Lifecycle Analysis & Management
- ODM Service
- Global Delivery
- Internal 2nd Source
- Broad Technology Competence in S&T Group

SYSTEMS – TRANSPORTATION

Kontron TRACe™ platforms are designed to make customization faster, system integration easier and reduce time to market while shrinking maintenance and support costs over the entire lifetime of the program. TRACe™ platforms uniquely provide:

- Long term support services for long lifetime programs, up to +25 years.
- Advanced health management tools with pre-installed CMON-Line Monitoring module, enabling operators to monitor the entire fleet, better anticipate maintenance, reduce turn-around times and increase the overall availability of the units.
- Kontron Security Solution "APPROTECT" offering comprehensive security mechanisms such as IP and copy protection while avoiding reverse engineering.

TRACe-B40x-TR
EN50155 Rugged Fanless Computer

- Easy customization to match any rolling stock application requirements
- Fanless, small size, rugged railway computer
- Intel Atom® E3900 series or 6th Gen Intel® Core™ i7/i3

TRACe V40x-TR
EN50155 Fanless Railway Performance Class Network Video Recorder

- 6th Gen Intel® Core™ i7-6600U or Core™ i3-6100U
- 2x hot-swappable SATA III drive bays with key locks
- 2x LAN for IP cameras video recording

TRACe-RM404-TR
19 Inch EN50155 Railway Computer

- Fanless Box Computer for train control applications
- 19" 1.5U Rackmount
- Intel Atom® Apollo Lake E3940

TRACe-LP1
EN50155 Fanless IoT Gateway featuring Semtech's LoRaWAN™ wireless RF IC solution

- Fanless IoT rugged gateway with LPWAN technology
- Concentrates and converts messages from LoRaWAN™ certified sensors to secure MQTT data streams
- Cloud connectivity through wired Ethernet, 4G LTE or Wi-Fi
- Cloud server on public URL for secure data collection and remote analysis

TRACe HMID104
Fanless Railway Driver Console

- Intel Atom® E3845 Quad Core™ @ 191 GHz
- Projected Capacitive Touch Screen and UIC612-01 hardkeys layout
- Upgradable and Scalable (mini PCI-E card slots)
- IP65 Dust and Water Jet on Front / IP54 Rear and Sides

TRACe-NET xM8P2G-1
Industrial Ethernet Switch for Railway applications

- Fast redundant ring (<10 ms over 250 connections)
- SNMP v1/v2c/v3 , STP/RSTP/MSTP, IGMP v2/v3, PTP client, LLDP protocol
- Traffic monitoring, SYSLOG, e-mail & relay fault notification
- Simple configuration using TRACe-NET view
- Dual redundant power supplies
- EN50155 Class Tx (-40 °C to +70 °C)
- IEC 61375 compliant with TTDP support

About Kontron – Member of the S&T Group

Kontron is a global leader in IoT/Embedded Computing Technology (ECT). As a part of technology group S&T, Kontron, together with its sister company S&T Technologies, offers a combined portfolio of secure hardware, middleware and services for Internet of Things (IoT) and Industry 4.0 applications. With its standard products and tailor-made solutions based on highly reliable state-of-the-art embedded technologies, Kontron provides secure and innovative applications for a variety of industries. As a result, customers benefit from accelerated time-to-market, reduced total cost of ownership, product longevity and the best fully integrated applications overall.

For more information, please visit: **www.kontron.com**

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